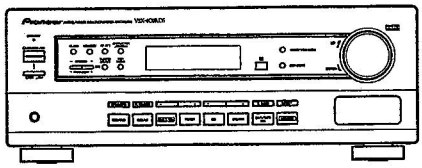
Pioneer

Service Manual



ORDER NO.
RRV2200

AUDIO/VIDEO MULTI-CHANNEL RECEIVER

VSX-409RDS

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Type	Model	Power Requirement	Remarks
	VSX-409RDS		
MYXJIEW	○	AC220-230V	
MYXJIGR	○	AC220-230V	
MVXJI	○	AC230V	

CONTENTS

1. SAFETY INFORMATION 2
2. EXPLODED VIEWS AND PARTS LIST 3
3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM 8
4. PCB CONNECTION DIAGRAM 24
5. PCB PARTS LIST 36
6. ADJUSTMENT 39
7. GENERAL INFORMATION 40
   7.1 DISASSEMBLY 40
   7.2 PARTS 41
      7.2.1 IC 41
      7.2.2 DISPLAY 47
8. PANEL FACILITIES AND SPECIFICATIONS 49

PIONEER CORPORATION 4-1, Meguro 1-chome, Meguro-ku, Tokyo 153-8654, Japan
PIONEER ELECTRONICS SERVICE, INC. P.O. Box 1760, Long Beach, CA 90801-1760, U.S.A.
PIONEER ELECTRONIC (EUROPE) N.V. Haven 1087, Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS ASIACENTRE PTE. LTD. 253 Alexandra Road, #04-01, Singapore 159936

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1. SAFETY INFORMATION

This service manual is intended for qualified service technicians ; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING
This product contains lead in solder and certain electrical parts contain chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm.

Health & Safety Code Section 25249.6 – Proposition 65

NOTICE
(FOR CANADIAN MODEL ONLY)
Fuse symbols (fast operating fuse) and/or (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

REMARQUE
(POUR MODÈLE CANADIEN SEULEMENT)
Les symboles de fusible (fusible de type rapide) et/ou (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

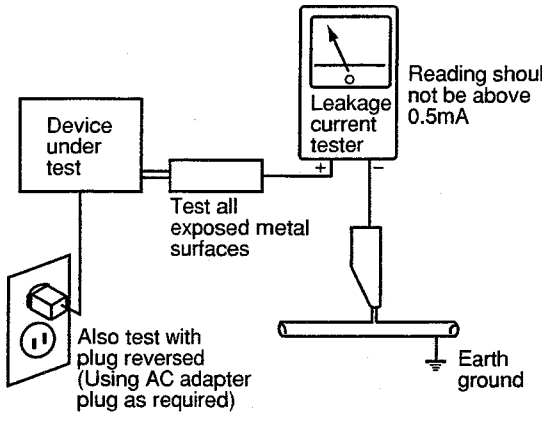
(FOR USA MODEL ONLY)

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5mA.


Reading should not be above 0.5mA
Leakage current tester
Device under test
Test all exposed metal surfaces
Also test with plug reversed (Using AC adapter plug as required)
Earth ground

AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

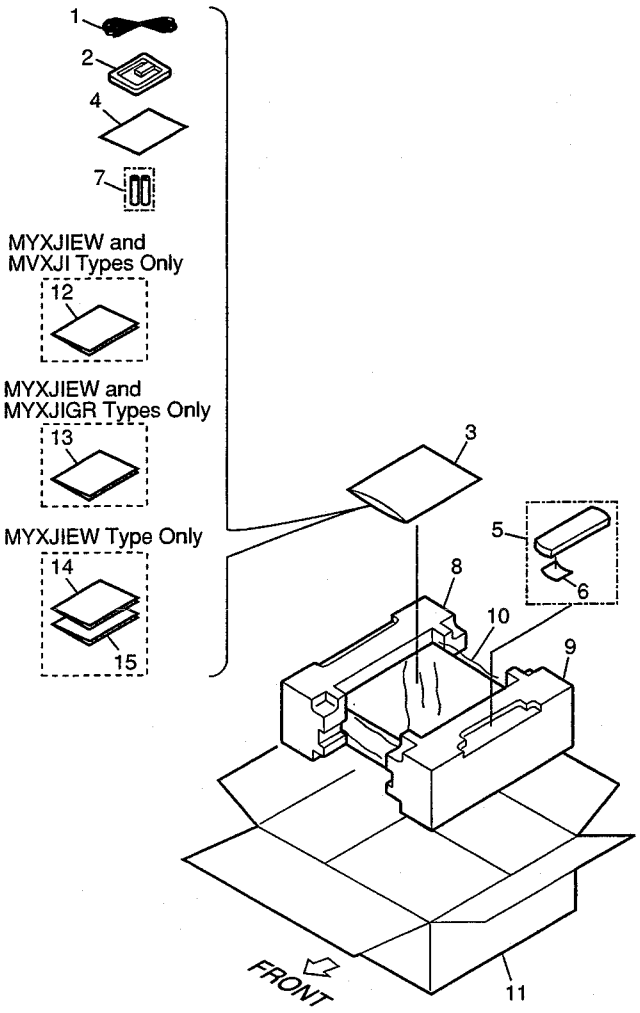
Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.
The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

2. EXPLODED VIEWS AND PARTS LIST

NOTES:
- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Screws adjacent to ▼ mark on the product are used for disassembly.*

2.1 PACKING



(1) PACKING PARTS LIST

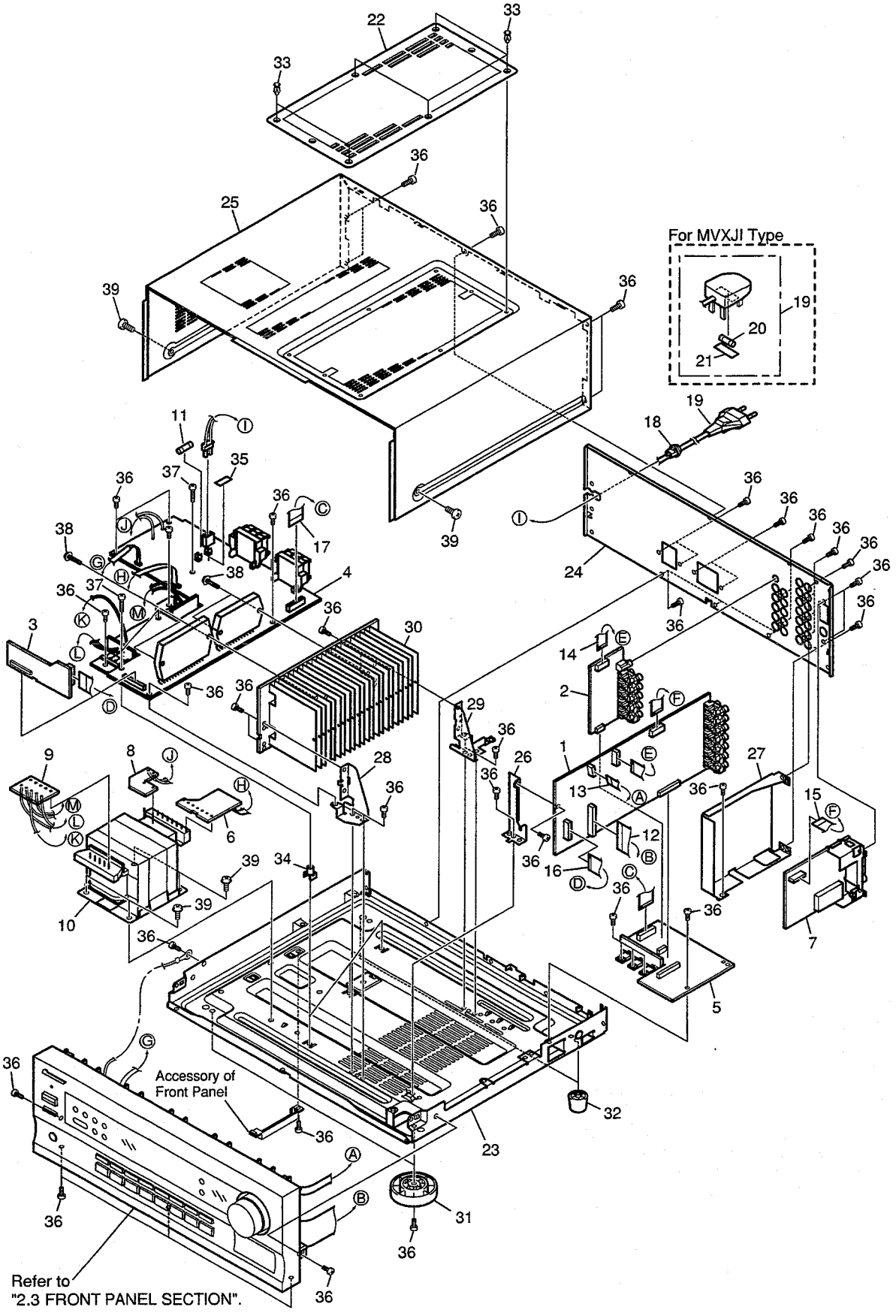
Mark	No.	Description	Part No.
	1	FM Wire Antenna	ADH7005
	2	AM Loop Antenna	ATB7009
	3	Polyethylene Bag (0.03 × 230 × 340)	Z21-038
NSP	4	Warranty Card	ARY7022
	5	Remote Control Unit (CU-VSX167)	AXD7243
	6	Battery Cover	RZN1156
NSP	7	Dry Cell Battery (R6P, AA)	VEM-013
	8	Left Pad	AHA7263
	9	Right Pad	AHA7264
	10	Packing Sheet	AHG7010
	11	Packing Case	AHD7771
	12	Operating Instructions (English)	See Contrast table (2)
	13	Operating Instructions (German)	See Contrast table (2)
	14	Operating Instructions (Dutch/French/Swedish)	See Contrast table (2)
	15	Operating Instructions (Spanish/Portuguese/Italian)	See Contrast table (2)

(2) CONTRAST TABLE

VSX-409RDS/MYXJIEW, MVXJI and MYXJIGR are constructed the same except for the following :

Mark	No.	Symbol and Description	Part No.			Remarks
			MYXJIEW Type	MVXJI Type	MYXJIGR Type	
	12	Operating Instructions (English)	ARB7200	ARB7200	Not used	
	13	Operating Instructions (German)	ARC7257	Not used	ARC7257	
	14	Operating Instructions (Dutch/French/Swedish)	ARC7258	Not used	Not used	
	15	Operating Instructions (Spanish/Portuguese/Italian)	ARC7259	Not used	Not used	

2.2 EXTERIOR SECTION



(1) EXTERIOR SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	MAIN Assy	AWX7381
	2	VIDEO&6CH IN Assy	AWX7383
NSP	3	AMP INPUT Assy	AWX7382
	4	AMP&PRIMARY Assy	AWX7388
	5	REGULATOR Assy	AWX7389
	6	TRANS 2 Assy	AWX7391
	7	FM/AM TUNER Unit	AXX7048
NSP	8	TRANS 1 Assy	AWX7390
NSP	9	TRANS 3 Assy	AWX7392
⚠	10	Power Transformer (AC220-230V)	ATS7259
⚠	11	Fuse (FU1 : T2.5A/250V)	REK1026
	12	FFC (J31 : 30P/190 BD 60V) (MAIN CN102 ↔ FRONT CN402)	ADD7186
	13	FFC (J32 : 8P/170 BD 60V) (MAIN CN103 ↔ FRONT CN401)	ADD7187
	14	FFC (J33 : 12P/200 BD 60V) (MAIN CN104 ↔ VIDEO&6CH IN CN305)	ADD7188
	15	FFC (J34 : 13P/80 BD 60V) (MAIN CN105 ↔ FM/AM TUNER CN1)	ADD7189
	16	FFC (J35 : 17P/110 BD 60V) (MAIN CN106 ↔ AMP INPUT CN290)	ADD7190
	17	FFC (J36 : 18P/80 BD 60V) (REGULATOR CN801 ↔ AMP&PRIMARY CN53)	ADD7191
	18	Strain Relief	CM-22B
⚠	19	AC Power Cord	See Contrast table (2)
⚠	20	Fuse (T5A)	See Contrast table (2)

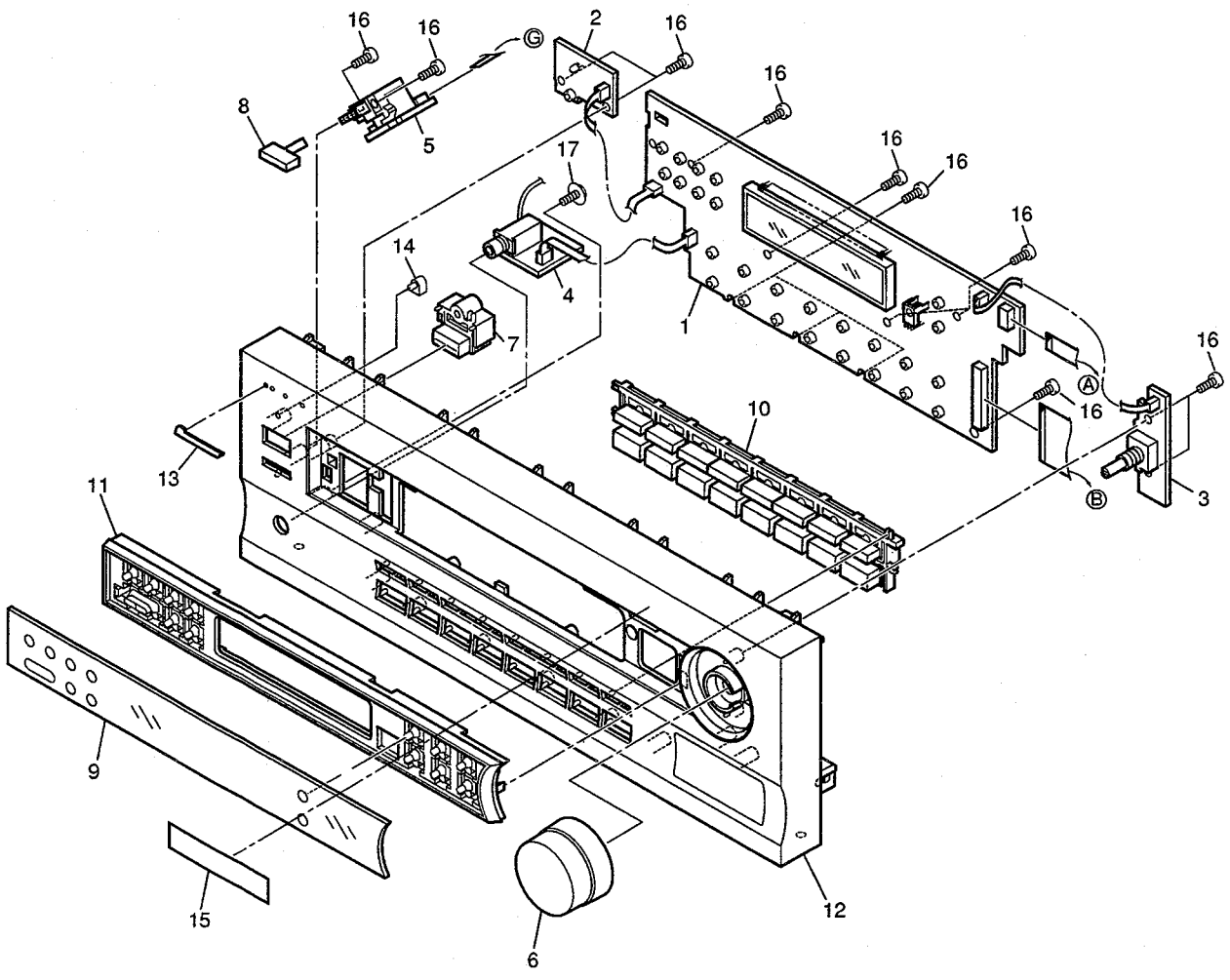
Mark	No.	Description	Part No.
	21	Fuse Holder	See Contrast table (2)
	22	Top Cover 808	AME7375
NSP	23	Under Base 409	ANA7094
	24	R Panel 409RDS	ANC7844
	25	Bonnet Case	AZN7779
	26	PCB Angle	ANG7253
	27	Shield R3	ANG7277
	28	Heat Sink Angle F	ANG7251
	29	Heat Sink Angle R	ANG7252
NSP	30	Heat Sink 0.8	ANH7110
	31	Insulator	PNW2766
	32	Foot Assy	REC1263
	33	Push Rivet	AEC7025
	34	PCB Mold	AMR2533
NSP	35	Fuse Card	AAX7277
	36	Screw	BBZ30P080FMC
	37	Screw	BBZ30P200FMC
	38	Screw	ABA7043
	39	Screw	FBT40P080FZK

(2) CONTRAST TABLE

VSX-409RDS/MYXJIEW, MVXJI and MYXJIGR are constructed the same except for the following :

Mark	No.	Symbol and Description	Part No.			Remarks
			MYXJIEW Type	MVXJI Type	MYXJIGR Type	
⚠	19	AC Power Cord	VDG1061	VDG1063	VDG1061	
⚠	20	Fuse (T5A)	Not used	PEK1003	Not used	
	21	Fuse Holder	Not used	VKR1003	Not used	

2.3 FRONT PANEL SECTION



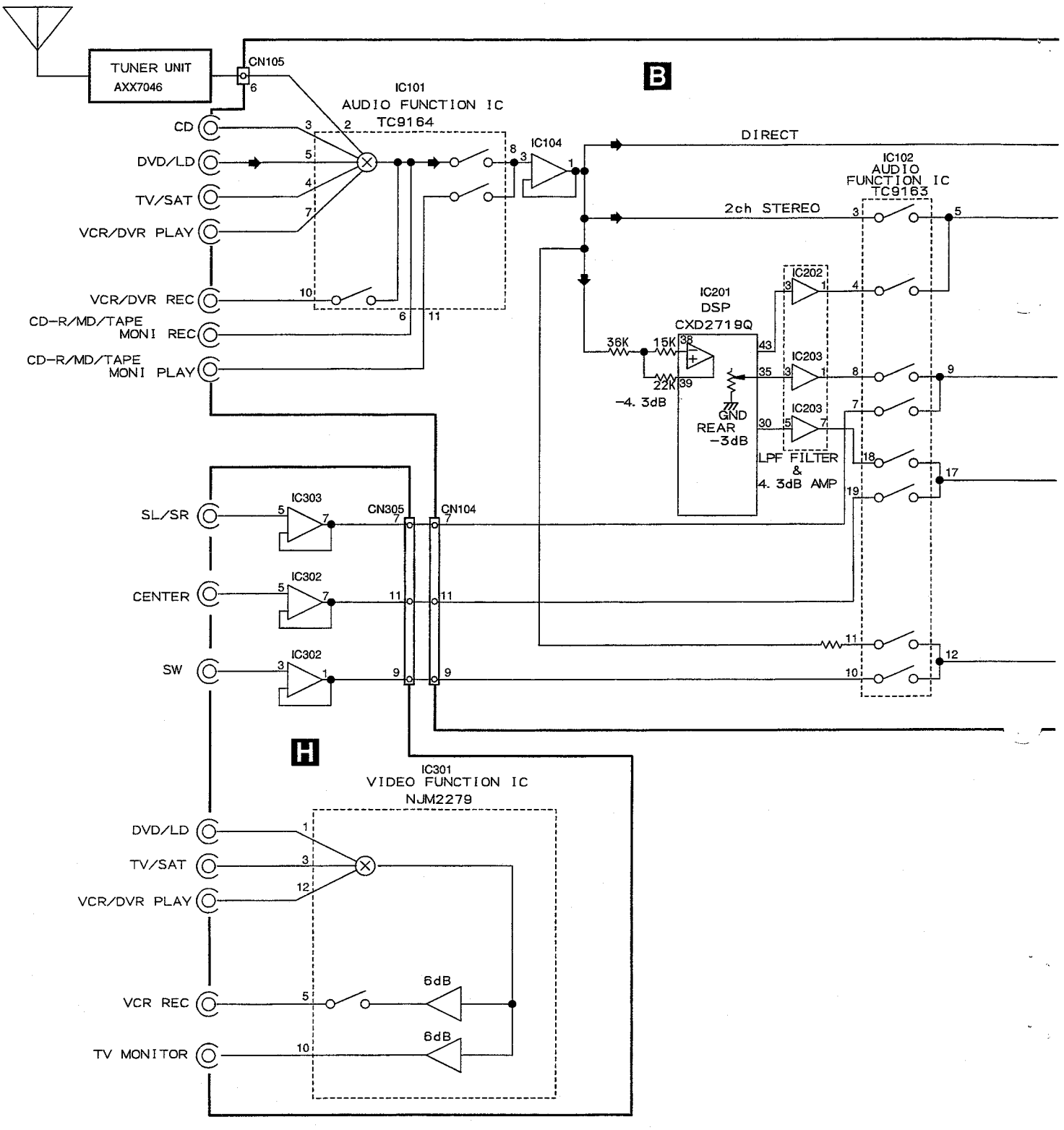
• FRONT PANEL SECTION PARTS LIST

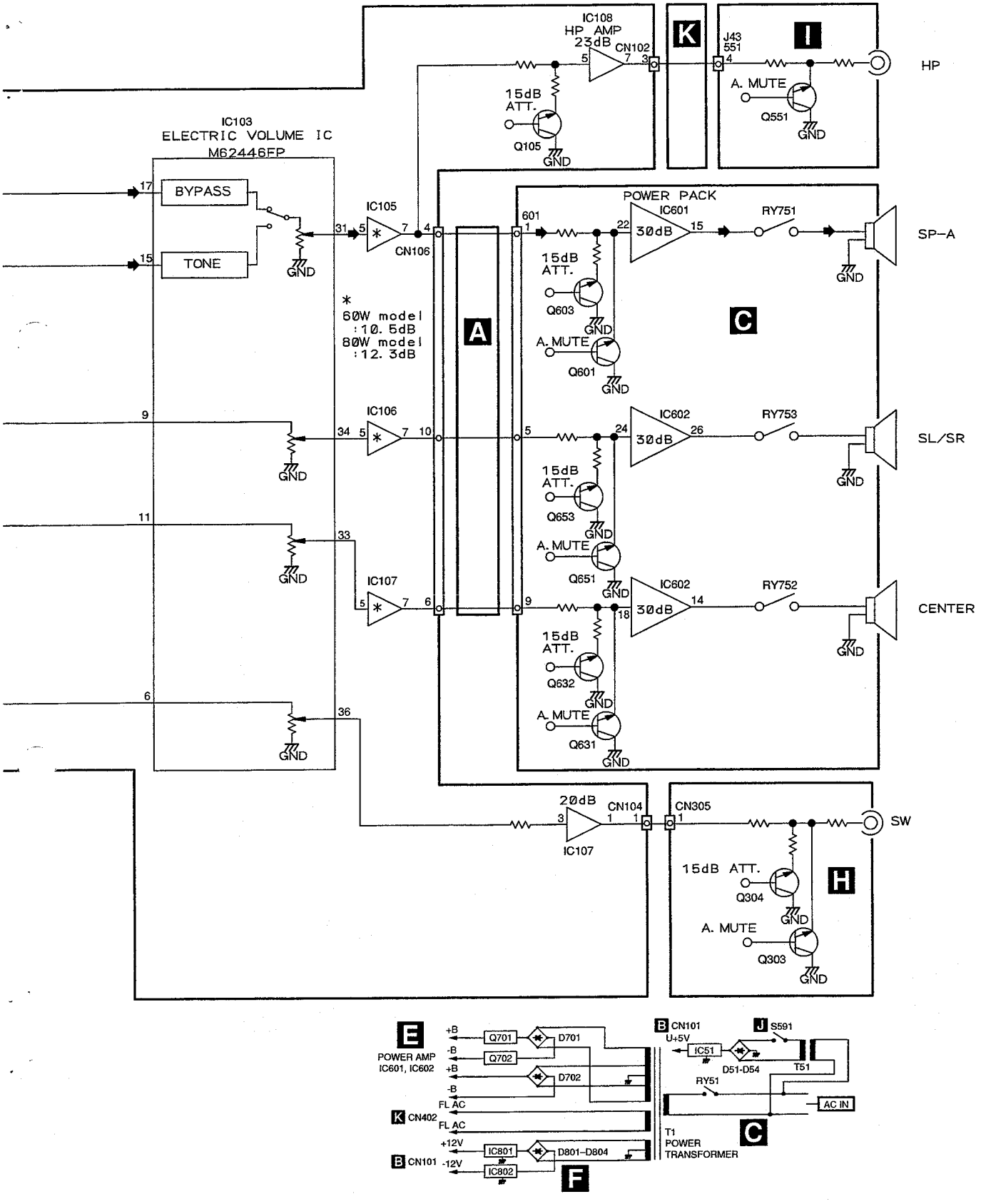
Mark	No.	Description	Part No.
	1	FRONT Assy	AWX7384
	2	POWER SW Assy	AWX7385
NSP	3	R. ENCODER Assy	AWX7386
NSP	4	H.P. Assy	AWX7387
	5	MECHA SW Assy	AWX7443
	6	Volume Knob	AAB7179
	7	Power Button	AAD7440
	8	Power Button M	AAD7442
	9	Window W 409RDS	AAK7683
	10	F Button 409RDS	AAD7537

Mark	No.	Description	Part No.
	11	Sub Panel 409RDS	AAD7552
	12	F Panel 409RDS	AMB7644
	13	Name Plate	PAM1776
	14	LED Lens	PNW2019
NSP	15	Getter 409RDS	AAX7727
	16	Screw	PPZ30P080FMC
	17	Screw	ABA7009

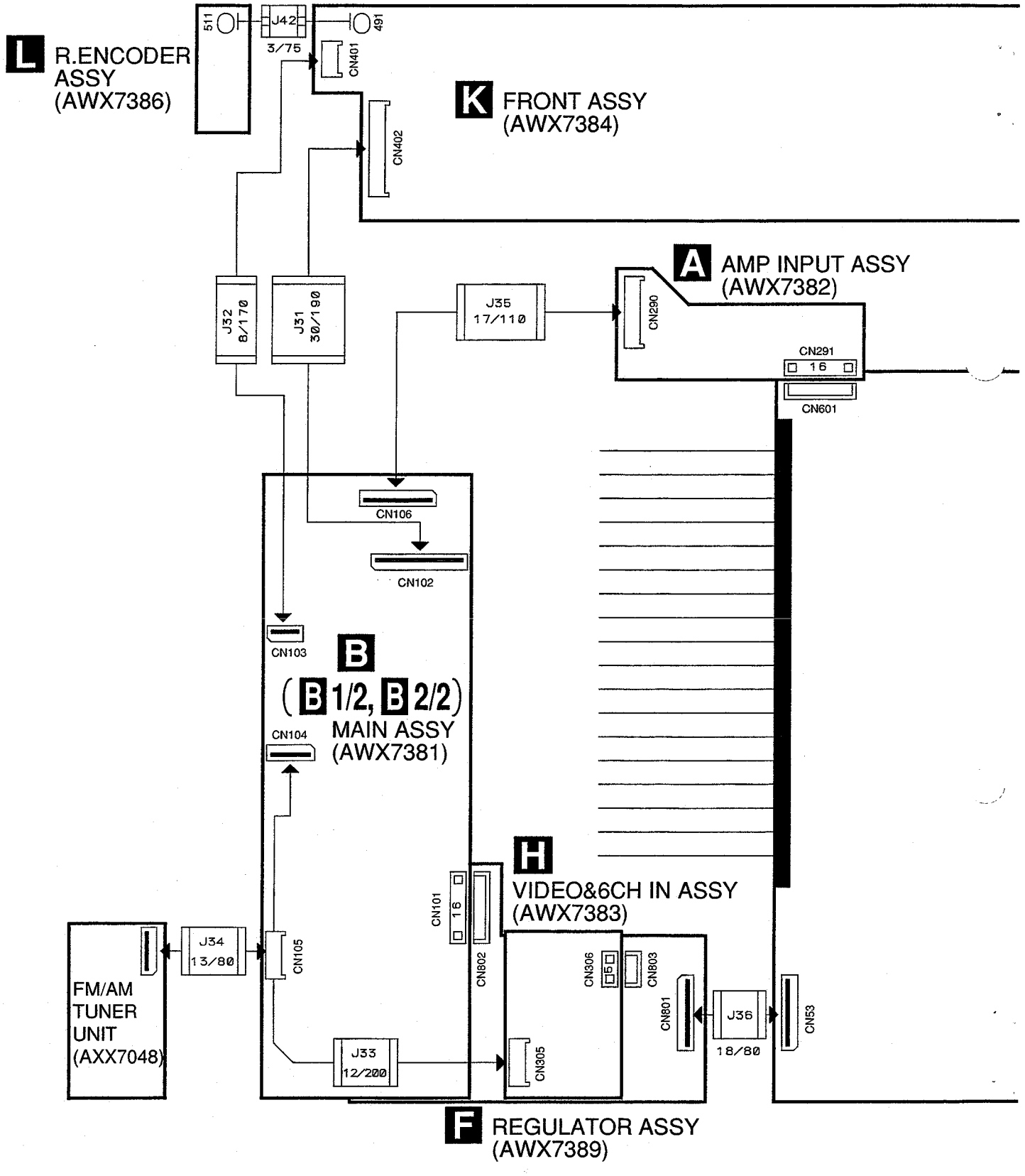
3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

3.1 BLOCK DIAGRAM

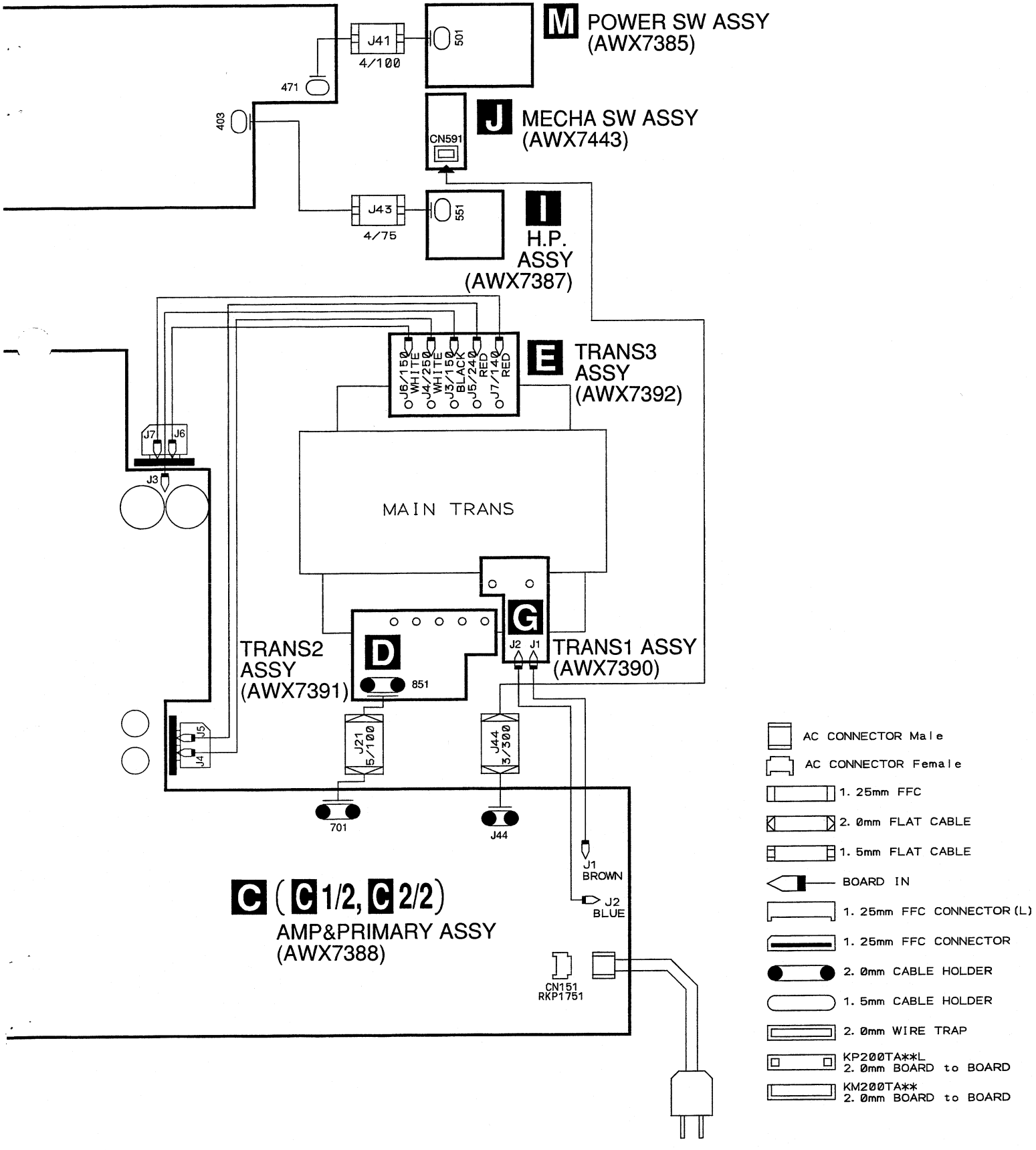



IC108
HP AMP
23dB
CN102
K
J43
551
I
HP
A. MUTE
Q551
GND
15dB
ATT.
Q105
IC103
ELECTRIC VOLUME IC
M62446FP
BYPASS
TONE
IC105
CN106
POWER PACK
IC601
30dB
RY751
SP-A
Q603
Q601
*
60W model
:10.5dB
80W model
:12.3dB
A
C
IC106
IC602
RY753
SL/SR
Q653
Q651
IC107
RY752
CENTER
Q632
Q631
20dB
CN104
CN305
SW
IC107
15dB ATT.
Q304
Q303
H
E
POWER AMP
IC601, IC602
+B
-B
Q701
Q702
D701
D702
FL AC
K CN402
B CN101
+12V
-12V
IC801
IC802
D801–D804
F
B CN101
U+5V
IC51
D51-D54
J S591
T51
RY51
AC IN
T1
POWER
TRANSFORMER
C

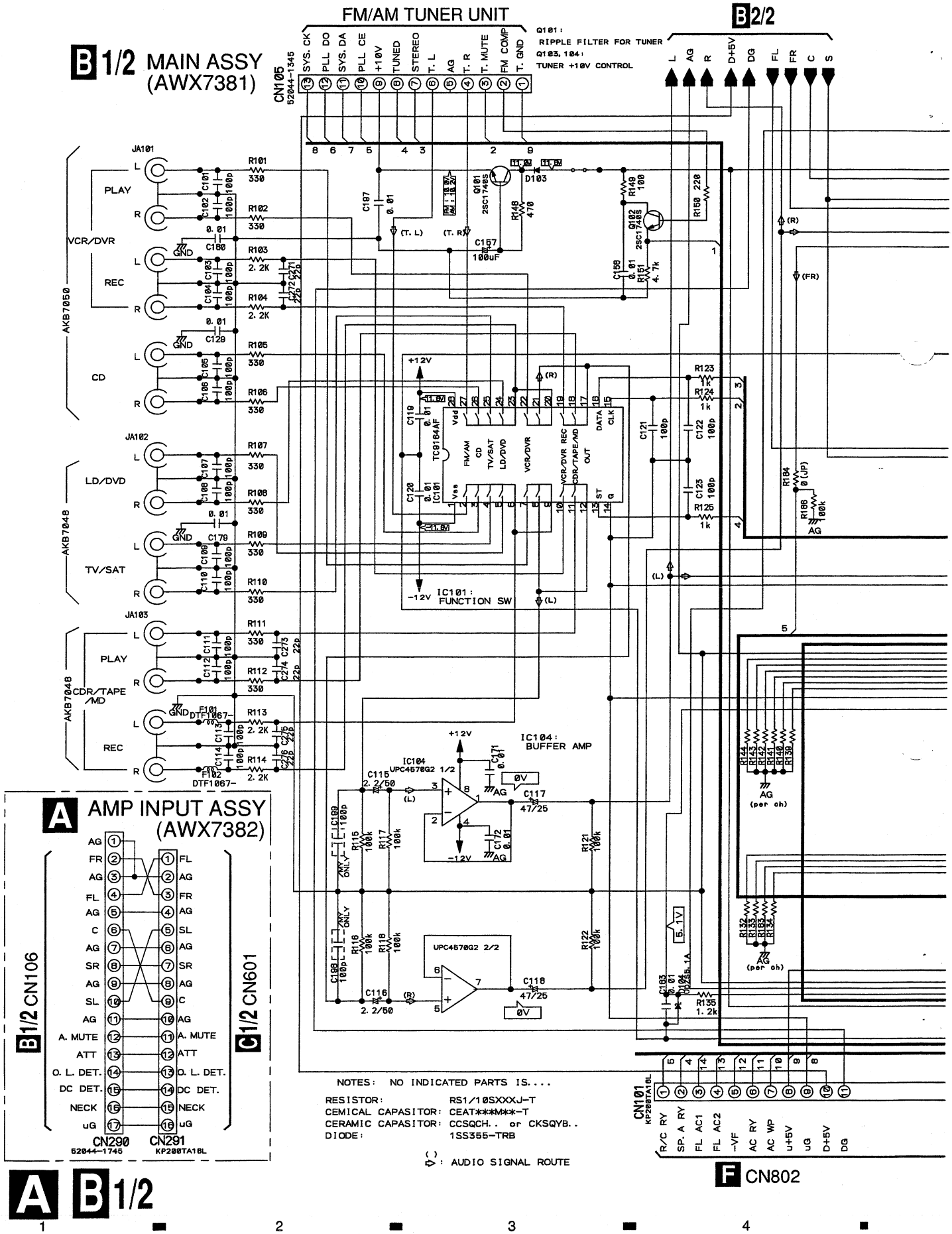
3.2 OVERALL WIRING CONNECTION DIAGRAM

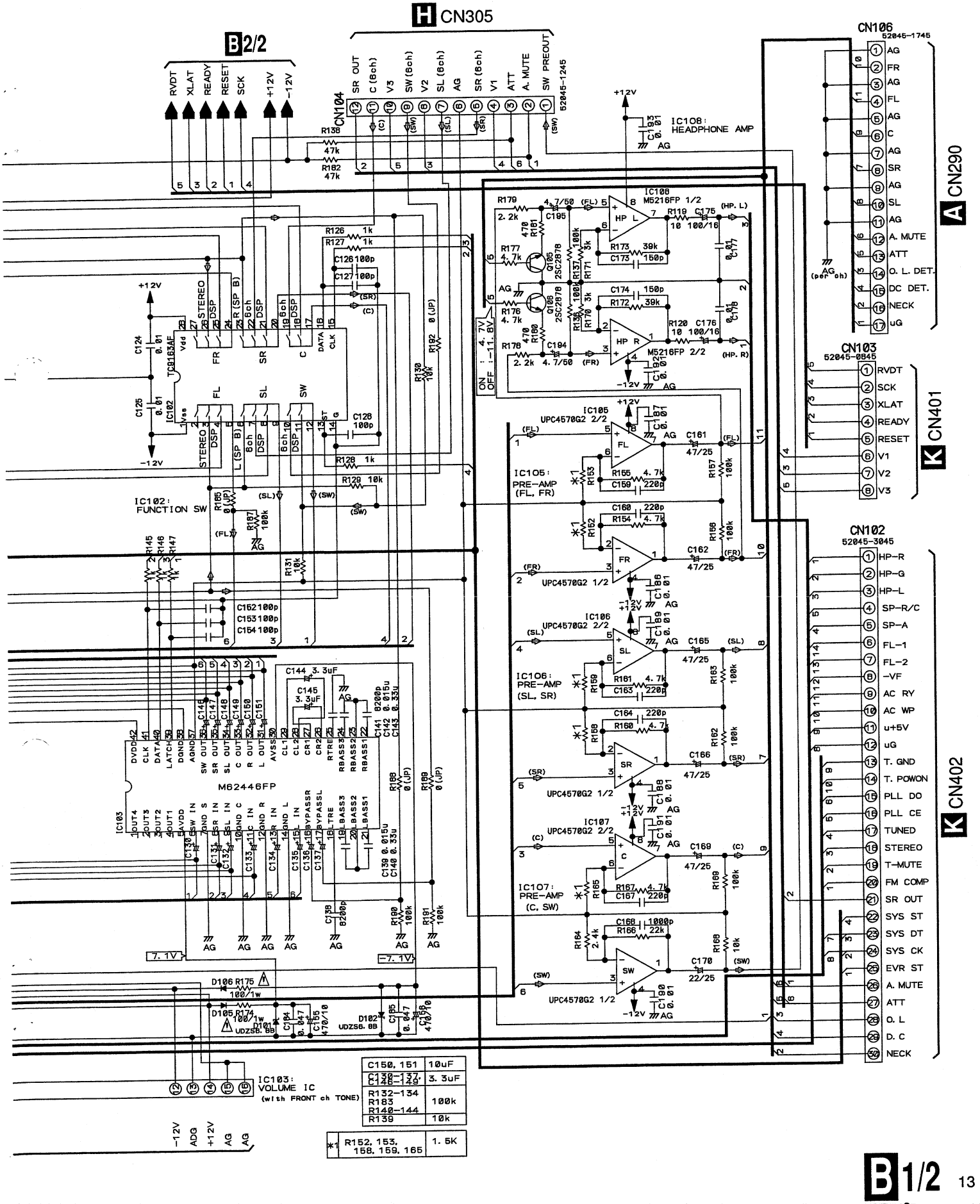


Note : When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST".

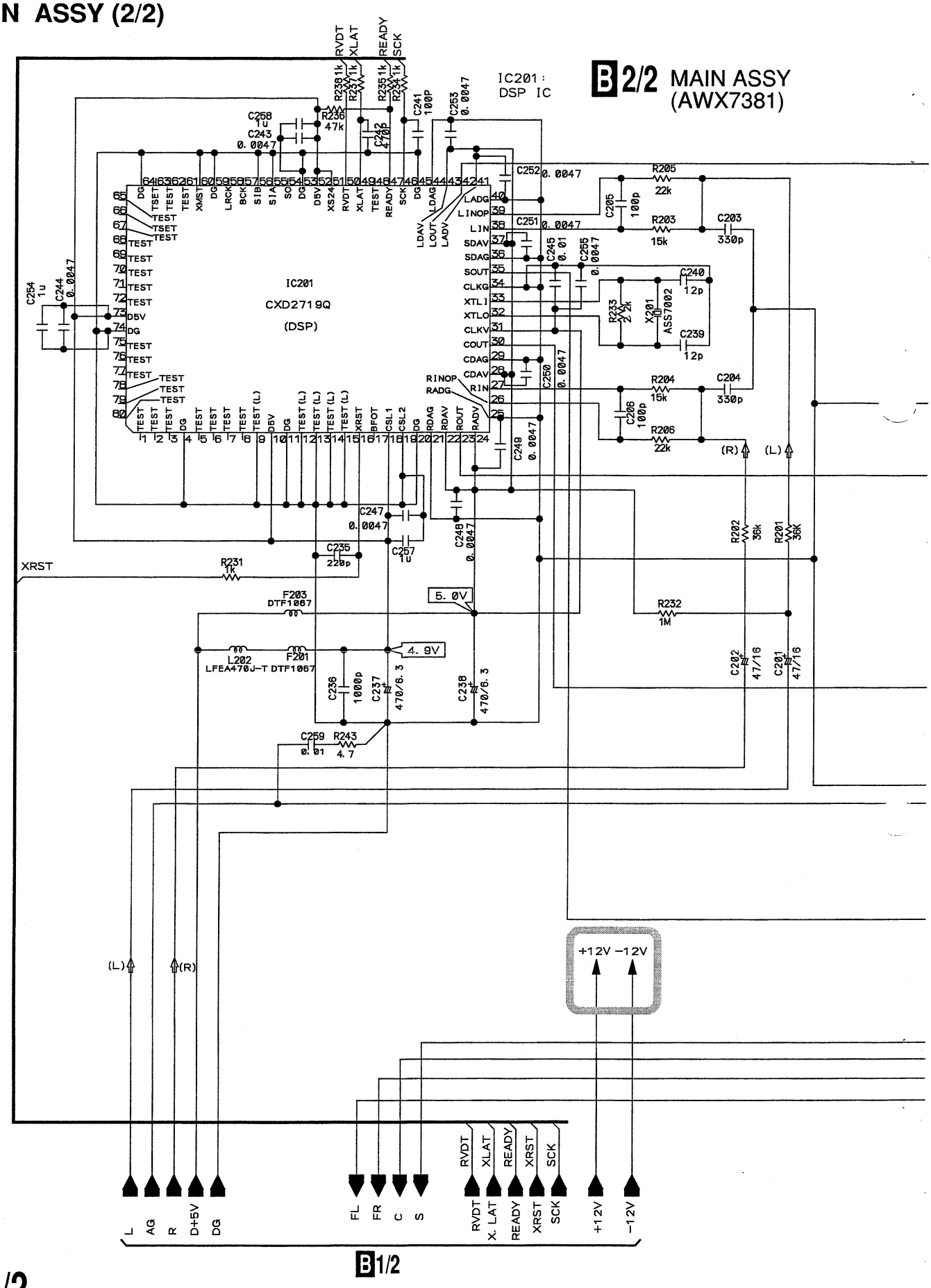


3.3 AMP INPUT and MAIN (1/2) ASSYS

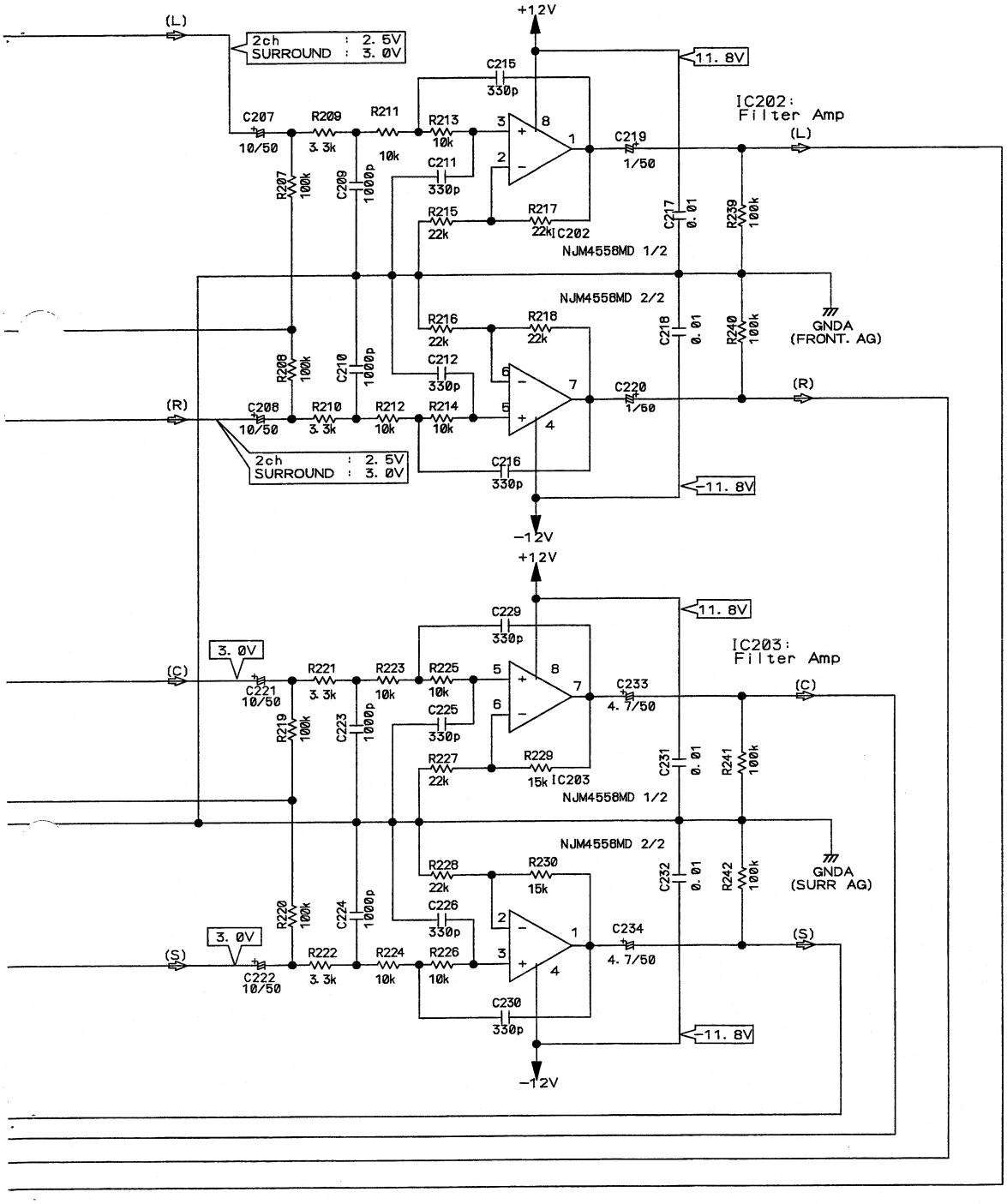



H CN305
B 2/2
CN104
CN106
52045-1745
CN103
52045-0845
CN102
52045-3045
A CN290
K CN401
K CN402
IC108: HEADPHONE AMP
IC100 M5216FP 1/2
M5216FP 2/2
IC105 UPC4570G2 2/2
UPC4570G2 1/2
IC106 UPC4570G2 2/2
IC107 UPC4570G2 2/2
IC105: PRE-AMP (FL, FR)
IC106: PRE-AMP (SL, SR)
IC107: PRE-AMP (C, SW)
IC102: FUNCTION SW
IC103: VOLUME IC (with FRONT ch TONE)
M62446FP
TC81G3AF
RVDT
XLAT
READY
RESET
SCK
+12V
-12V
AG
SR OUT
C (8ch)
V3
SW (8ch)
V2
SL (8ch)
SR (8ch)
V1
ATT
A. MUTE
SW PREOUT
HP-R
HP-G
HP-L
SP-R/C
SP-A
FL-1
FL-2
-VF
AC RY
AC WP
u+5V
uG
T. GND
T. POWON
PLL DO
PLL CE
TUNED
STEREO
T-MUTE
FM COMP
SR OUT
SYS ST
SYS DT
SYS CK
EVR ST
A. MUTE
ATT
O. L
D. C
NECK
AG
FR
AG
FL
AG
C
AG
SR
AG
SL
AG
A. MUTE
ATT
O. L. DET.
DC DET.
NECK
uG
RVDT
SCK
XLAT
READY
RESET
V1
V2
V3
HP-R
HP-G
HP-L
SP-R/C
SP-A
FL-1
FL-2
-VF
AC RY
AC WP
u+5V
uG
T. GND
T. POWON
PLL DO
PLL CE
TUNED
STEREO
T-MUTE
FM COMP
SR OUT
SYS ST
SYS DT
SYS CK
EVR ST
A. MUTE
ATT
O. L
D. C
NECK
C150, 151 10uF
C130-137, C144-149 3. 3uF
R132-134 R183 R142-144 100k
R139 10k
*1 R152, 153, 158, 159, 165 1. 5K

3.4 MAIN ASSY (2/2)



: The power supply is shown with the marked box.

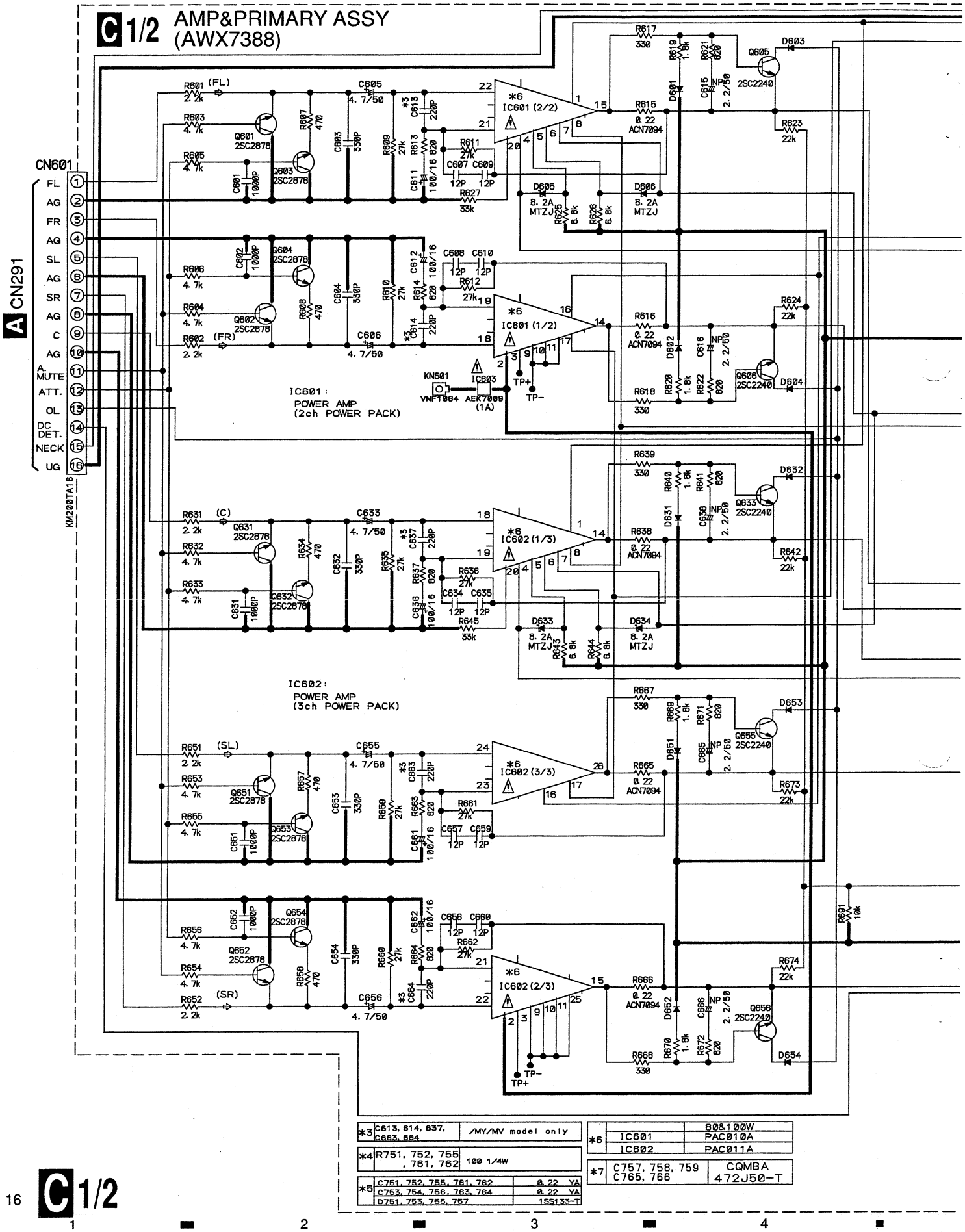


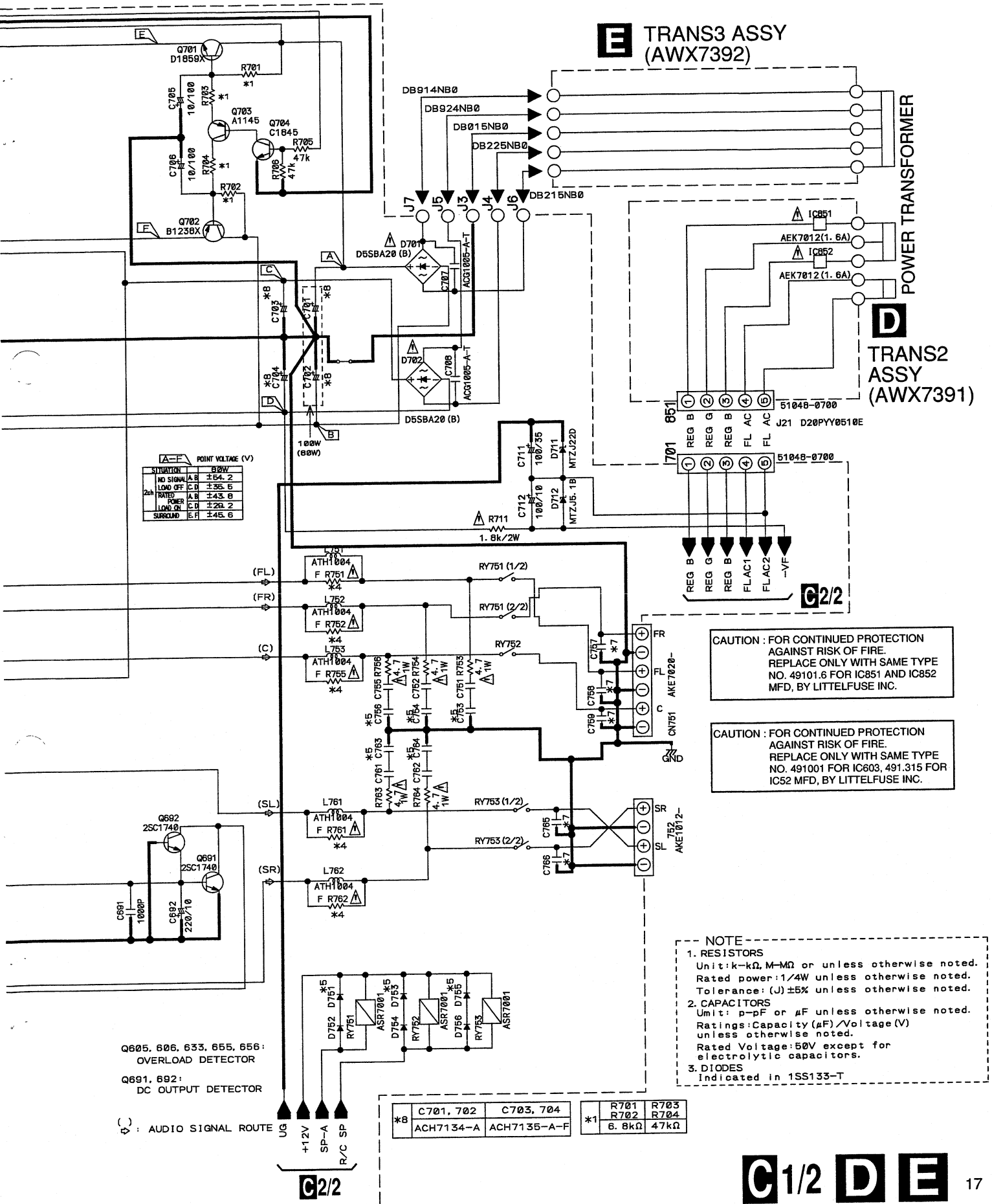
NOTES: NO INDICATED PARTS IS....

RESISTOR:	RS1/10S***J-T
CEMICAL CAPASITOR:	CEAT***M**-T
CERAMIC CAPASITOR:	CCSQCH... or CKSQYB...
DIODE:	1SS355-TRB

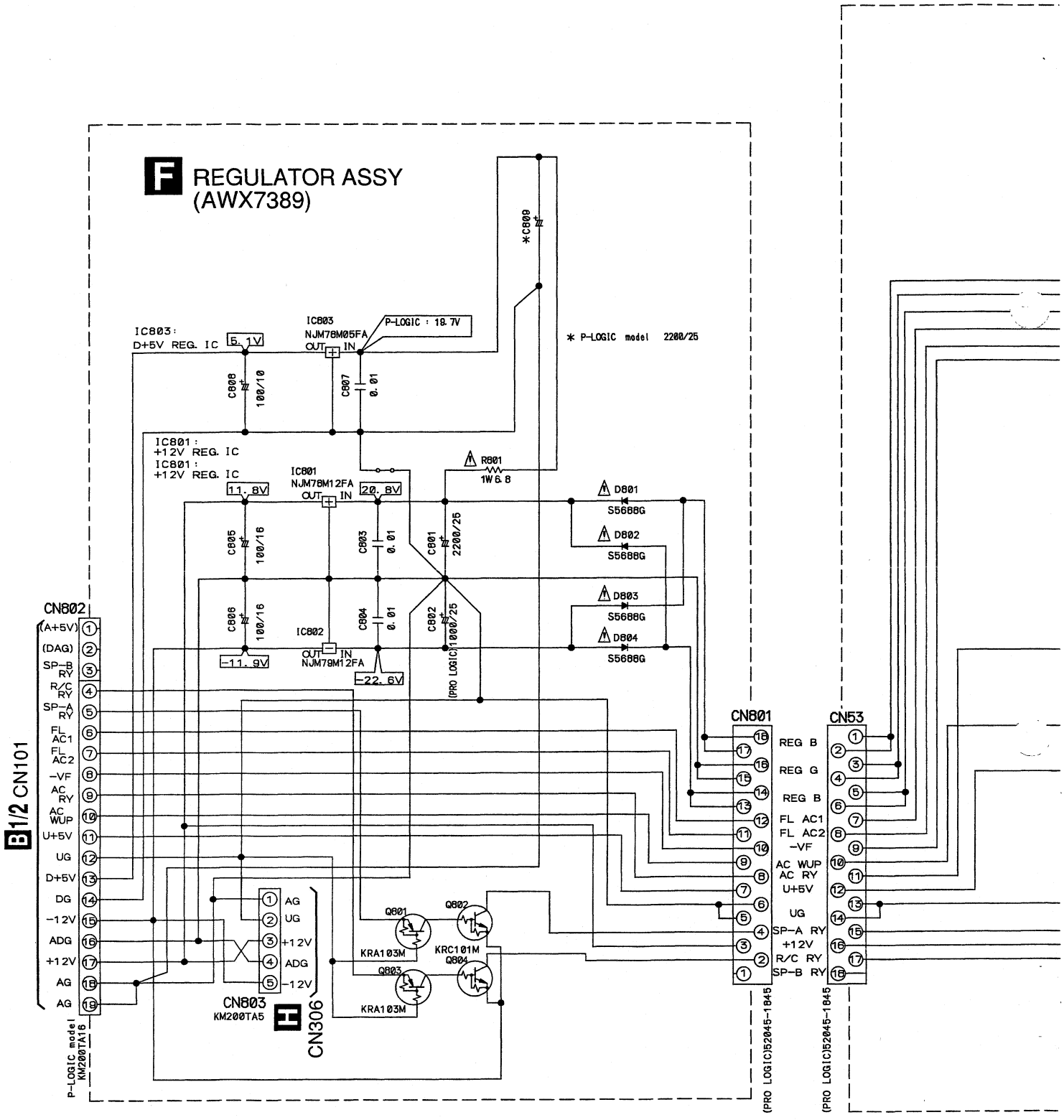
( )
⇨ : AUDIO SIGNAL ROUTE

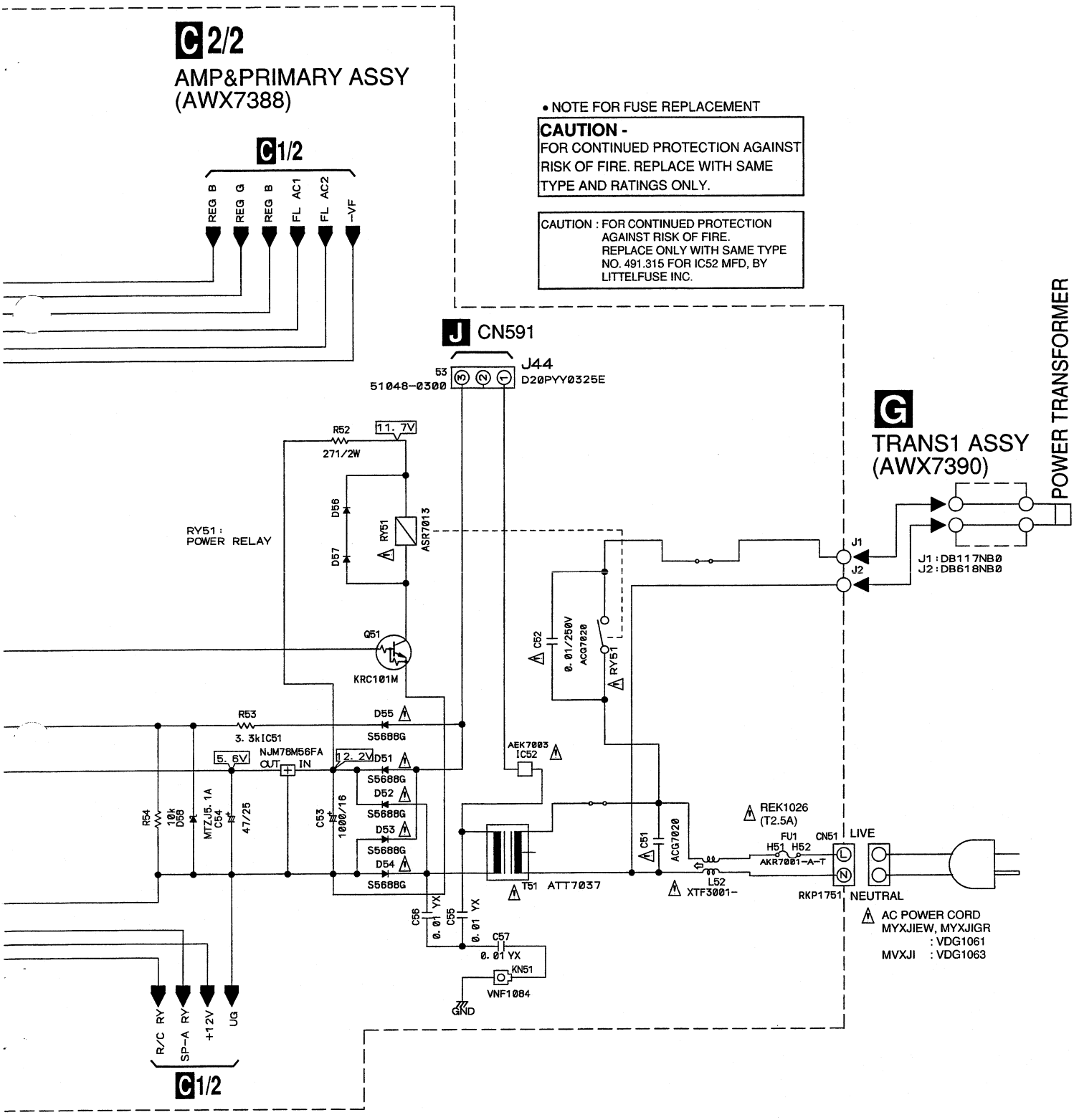
3.5 AMP&PRIMARY (1/2), TRANS2 and TRANS3 ASSYS



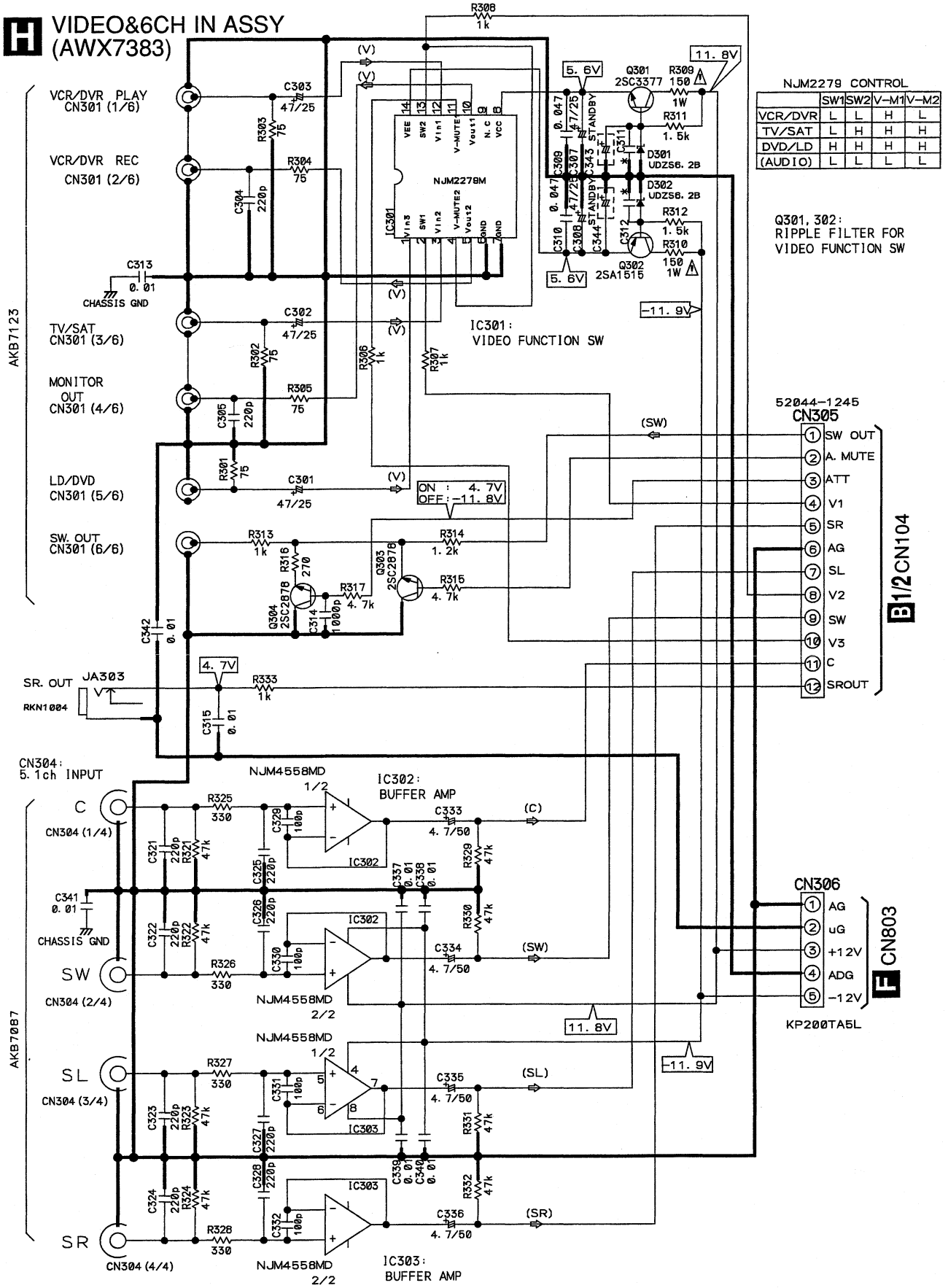

E TRANS3 ASSY (AWX7392)
POWER TRANSFORMER
D TRANS2 ASSY (AWX7391)
DB914NB0
DB924NB0
DB015NB0
DB225NB0
DB215NB0
J7 J5 J3 J4 J6
IC851
AEK7012(1.6A)
IC852
AEK7012(1.6A)
851
51048-0700
J21 D20PYY0510E
REG B REG G REG B FL AC FL AC
701
51048-0700
REG B REG G REG B FLAC1 FLAC2 -VF
C2/2
D701
D5SBA20 (B)
ACG1005-A-T
C707
D702
D5SBA20 (B)
C708
100W (80W)
C711 100/35 D711 MTZJ22D
C712 100/10 D712 MTZJ6.1B
R711 1.8k/2W
A-E POINT VOLTAGE (V)
SITUATION 80W
NO SIGNAL A B ±54.2
LOAD OFF C D ±36.6
2ch RATED POWER A B ±43.8
LOAD ON C D ±29.2
SURROUND E F ±45.6
(FL) (FR) (C) (SL) (SR)
L751 ATH1004 F R751 *4
L752 ATH1004 F R752 *4
L753 ATH1004 F R755 *4
L761 ATH1004 F R761 *4
L762 ATH1004 F R762 *4
RY751 (1/2)
RY751 (2/2)
RY752
RY753 (1/2)
RY753 (2/2)
R755 R756 4.7 1W
R752 R754 4.7 1W
R751 R753 4.7 1W
R763 R764 4.7 1W
C755 C756 C752 C754 C751 C753 C763 C761 C764 C762
C757 C758 C769 *7
FR FL C
AKE7020-
CN751
GND
C765 C766 *7
SR SL
752
AKE1012-
Q692 2SC1740
Q691 2SC1740
C691 1000P
C692 220/10
D751 D752 D753 D754 D755 D756
RY751 RY752 RY753
ASR7001
Q605, 606, 633, 655, 656: OVERLOAD DETECTOR
Q691, 692: DC OUTPUT DETECTOR
( ) ⇨ : AUDIO SIGNAL ROUTE
UG +12V SP-A R/C SP
C2/2
CAUTION : FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE ONLY WITH SAME TYPE NO. 49101.6 FOR IC851 AND IC852 MFD, BY LITTELFUSE INC.
CAUTION : FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE ONLY WITH SAME TYPE NO. 491001 FOR IC603, 491.315 FOR IC52 MFD, BY LITTELFUSE INC.
NOTE
1. RESISTORS
Unit:k-kΩ, M-MΩ or unless otherwise noted.
Rated power:1/4W unless otherwise noted.
Tolerance: (J)±5% unless otherwise noted.
2. CAPACITORS
Umit: p-pF or μF unless otherwise noted.
Ratings:Capacity (μF)/Voltage (V) unless otherwise noted.
Rated Voltage:50V except for electrolytic capacitors.
3. DIODES
Indicated in 1SS133-T
*8 C701, 702: ACH7134-A; C703, 704: ACH7135-A-F
*1 R701 R702: 6.8kΩ; R703 R704: 47kΩ

3.6 AMP&PRIMARY (2/2), REGULATOR and TRANS1 ASSYS

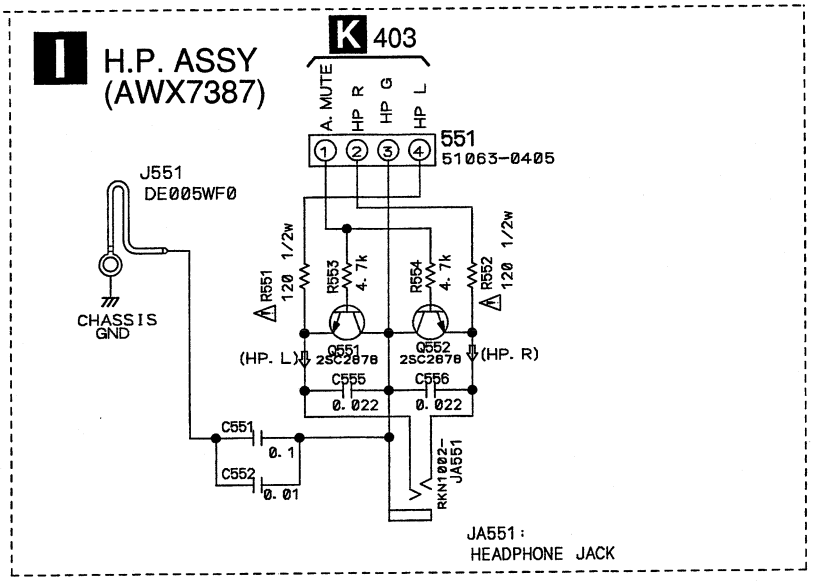



C 2/2
AMP&PRIMARY ASSY
(AWX7388)
C 1/2
REG B
REG G
REG B
FL AC1
FL AC2
-VF
• NOTE FOR FUSE REPLACEMENT
CAUTION -
FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE WITH SAME TYPE AND RATINGS ONLY.
CAUTION : FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE ONLY WITH SAME TYPE NO. 491.315 FOR IC52 MFD, BY LITTELFUSE INC.
J CN591
J44
53
51048-0300
D20PYY0325E
G
TRANS1 ASSY
(AWX7390)
POWER TRANSFORMER
J1 : DB117NB0
J2 : DB618NB0
J1
J2
RY51 :
POWER RELAY
R52
271/2W
11. 7V
D56
D57
RY51
ASR7013
Q51
KRC101M
R53
3. 3kIC51
5. 6V
NJM78M56FA
OUT
IN
12. 2V
D55
S5688G
D51
D52
D53
D54
R54
10k
D58
MTZJ5. 1A
C54
47/25
C53
1000/16
C52
0. 01/250V
ACG7020
RY51
AEK7003
IC52
C56
0. 01 YX
C55
0. 01 YX
C57
0. 01 YX
KN51
VNF1084
GND
T51 ATT7037
C51
ACG7020
REK1026
(T2.5A)
FU1
H51 H52
AKR7001-A-T
CN51
LIVE
NEUTRAL
RKP1751
L52
XTF3001-
AC POWER CORD
MYXJIEW, MYXJIGR
: VDG1061
MVXJI : VDG1063
R/C RY
SP-A RY
+12V
UG
C 1/2

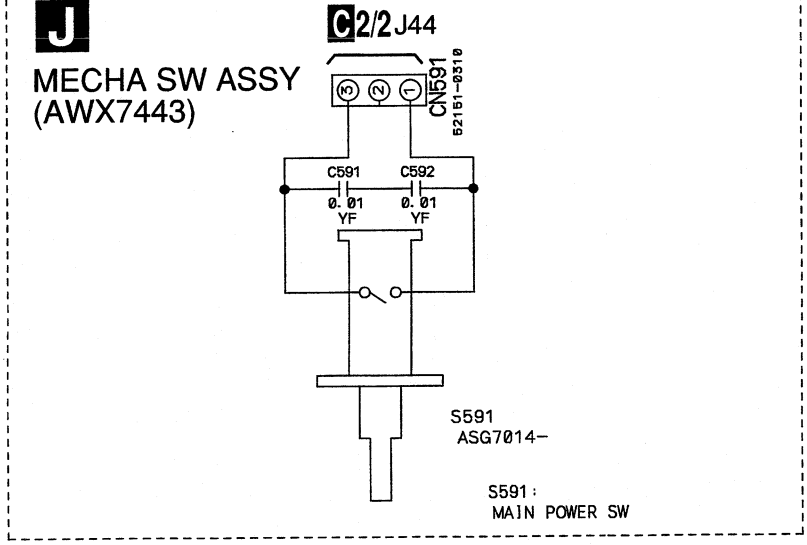
3.7 VIDEO&6CH IN, H. P. and MECHA SW ASSYS



I H.P. ASSY (AWX7387)



J MECHA SW ASSY (AWX7443)



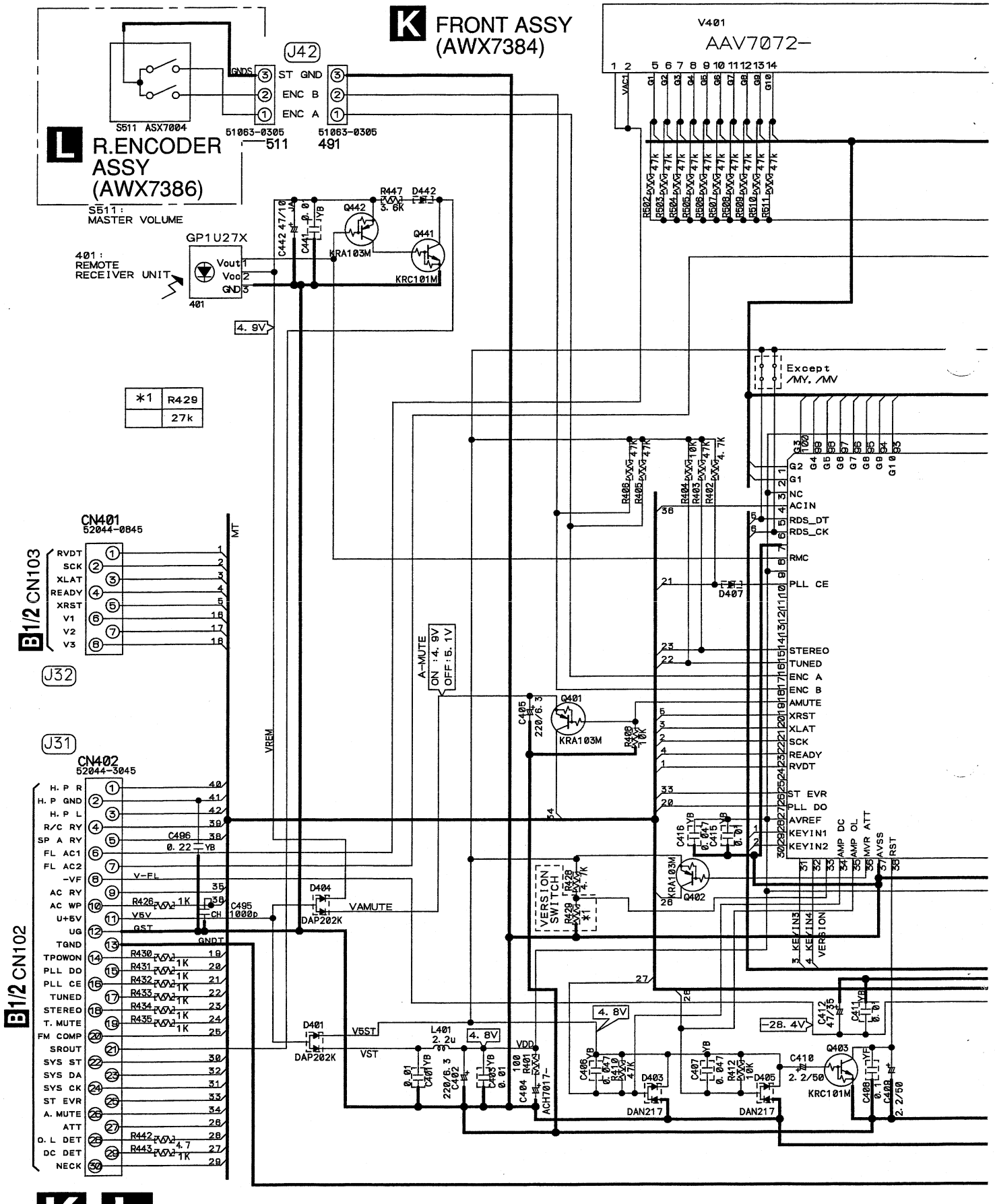
NOTE

1. RESISTORS RS1/10S...J-T
2. CAPACITORS
   CEMICAL CAPASITOR CEAT...M.-T
   CERAMIC CAPASITOR CCSQCH.. or CKSQYB..
3. DIODES 1SS355-TRB

( ) : AUDIO SIGNAL ROUTE

(V) : VIDEO SIGNAL ROUTE

3.8 FRONT, R. ENCODER and POWER SW ASSYS



FRONT ASSY

S451 : DOLBY PRO LOGIC	S462 : CD	S472 : TUNING SELECT
S452 : DSP MODE	S463 : FL DIMMER	S473 : STATION (+)
S454 : DIRECT	S464 : BASS (–)	S474 : STATION (–)
S455 : TREBLE (+)	S465 : DVD/LD	S475 : MONITOR
S456 : FM/AM	S466 : VCR/DVR	S476 : CD-R/TAPE MD
S457 : S.BASS	S467 : SPEAKERS	S477 : CHARACTER/SEARCH
S458 : TREBLE (–)	S468 : EON MODE	
S459 : BASS (+)	S469 : RF ATT	
S460 : DVD 5.1CH	S470 : MEMORY	
S461 : TV/SAT	S471 : CLASS	

(402 FL HOLDER VNF1096-)

D501: STANDBY IND.

J41 471 501

LED
U+5V
KEY
UG
VPOW
GNDP
STAND BY
(POWER SW)

51063-0405

M POWER SW ASSY (AWX7385)

4.7V

Q471 KRA103M

:XSG3001-

IC402 PDG246A

RY C/R
RY A
RY AC
NECK
SYS ST
T. MUTE
TPOWON
FM+

KEY IN VOLTAGE [V]

IC481 BU1923F

Q481 2SA1515
Q482 KRC101M
Q483 2SC1740S

X401 ASS7018 7.2MHz
ASS7004- 14.332MHz

403 J43 51063-0405

A. MUTE
H. P R
H. P GND
H. P L

551

NOTE

1. RESISTORS
   Unit: k-kΩ, M-MΩ or Ω unless otherwise noted.
   Rated power: 1/10W unless otherwise noted.
   Tolerance: (J)±5% unless otherwise noted.
2. CAPACITORS
   Unit: p-pF or μF unless otherwise noted.
   Ratings: Capacity(μF)/Voltage(V) unless otherwise noted.
   Rated Voltage: 50V expect for electrolytic capacitors.
   JA:CEJA
3. DIODES
   Indicated in 1SS355-TRB.

IC481: RDS TUNER IC

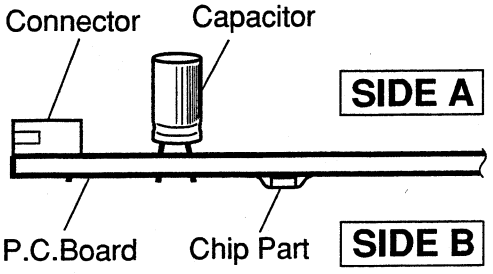
4. PCB CONNECTION DIAGRAM

NOTE FOR PCB DIAGRAMS :

1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

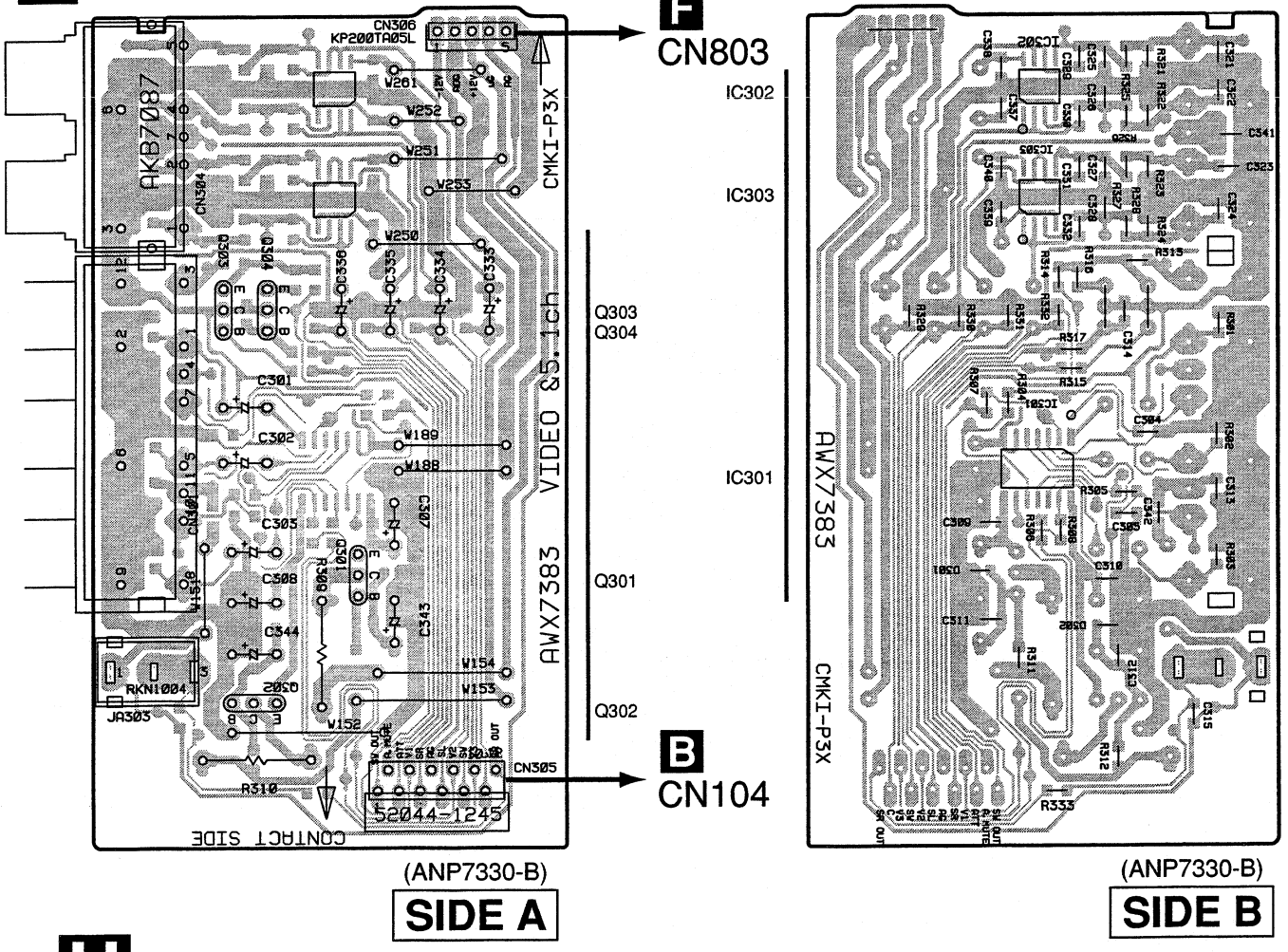
Symbol In PCB Diagrams	Symbol In Schematic Diagrams	Part Name
B C E	B C E B C E	Transistor
B C E	B C E B C E	Transistor with resistor
D G S	D G S D G S	Field effect transistor
		Resistor array
		3-terminal regulator

3. The parts mounted on this PCB include all necessary parts for several destinations.
   For further information for respective destinations, be sure to check with the schematic diagram.
4. View point of PCB diagrams.



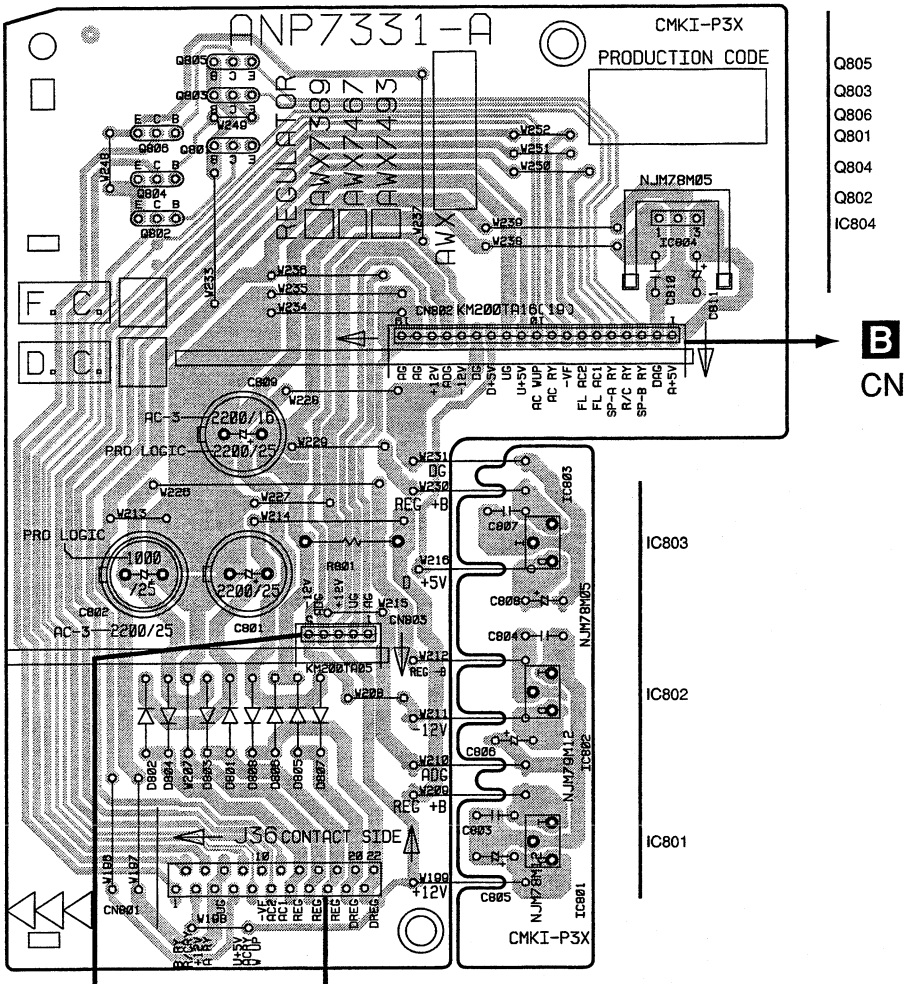
4.1 VIDEO&6CH IN ASSY

H VIDEO&6CH IN ASSY

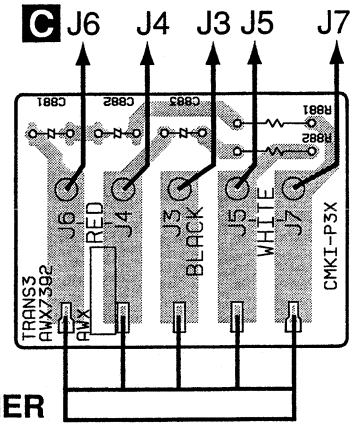


4.2 TRANS2, TRANS3, REGULATOR and TRANS1 ASSYS

F REGULATOR ASSY

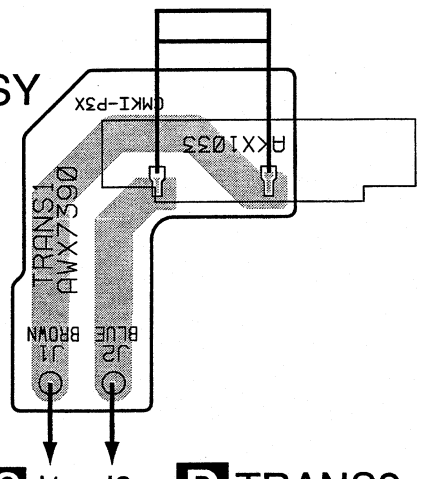


E TRANS3 ASSY



POWER TRANSFORMER

G TRANS1 ASSY

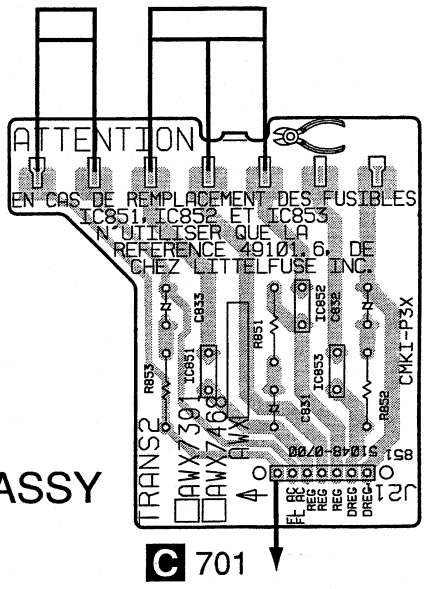


(ANP7331-A)

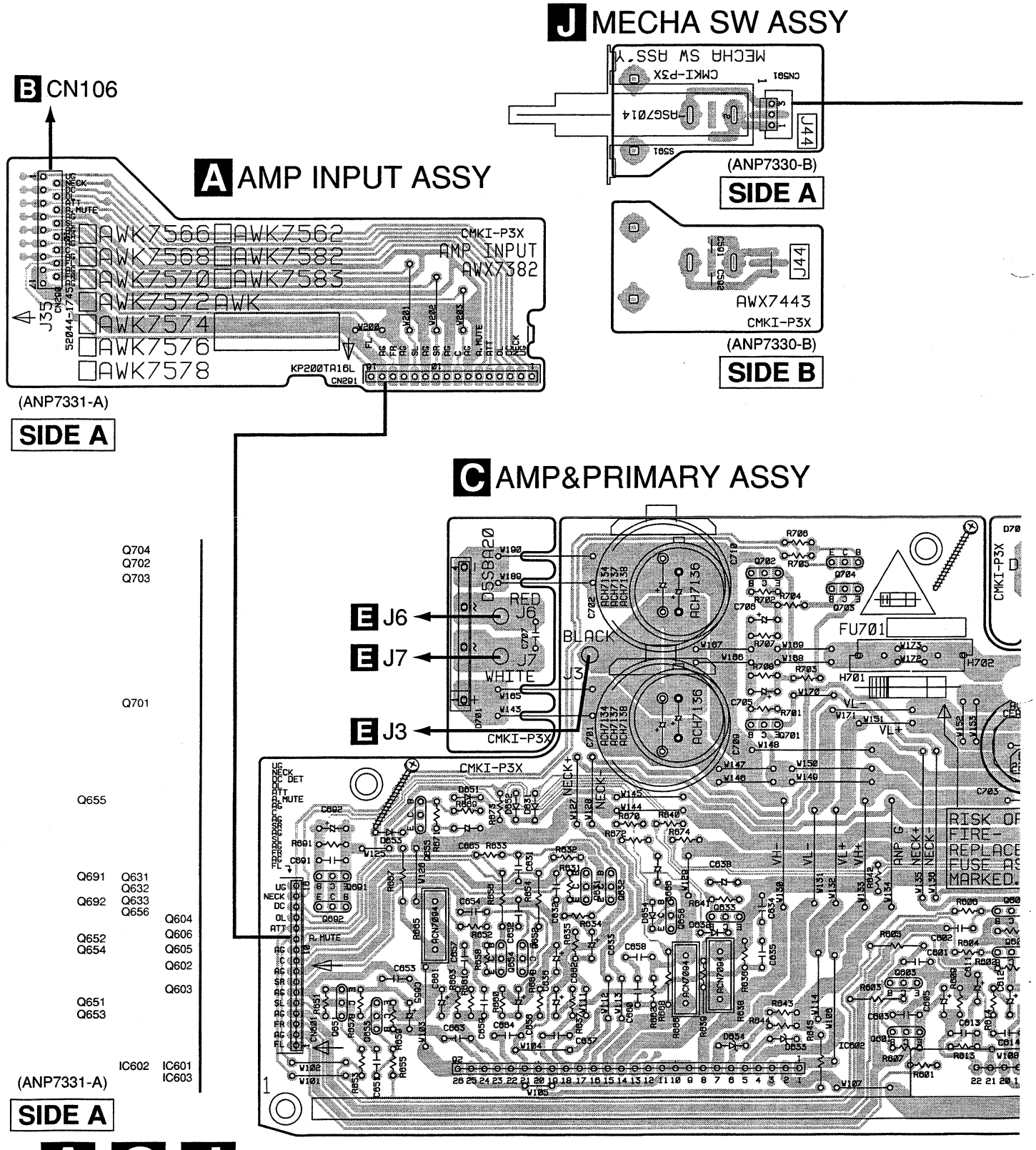
SIDE A

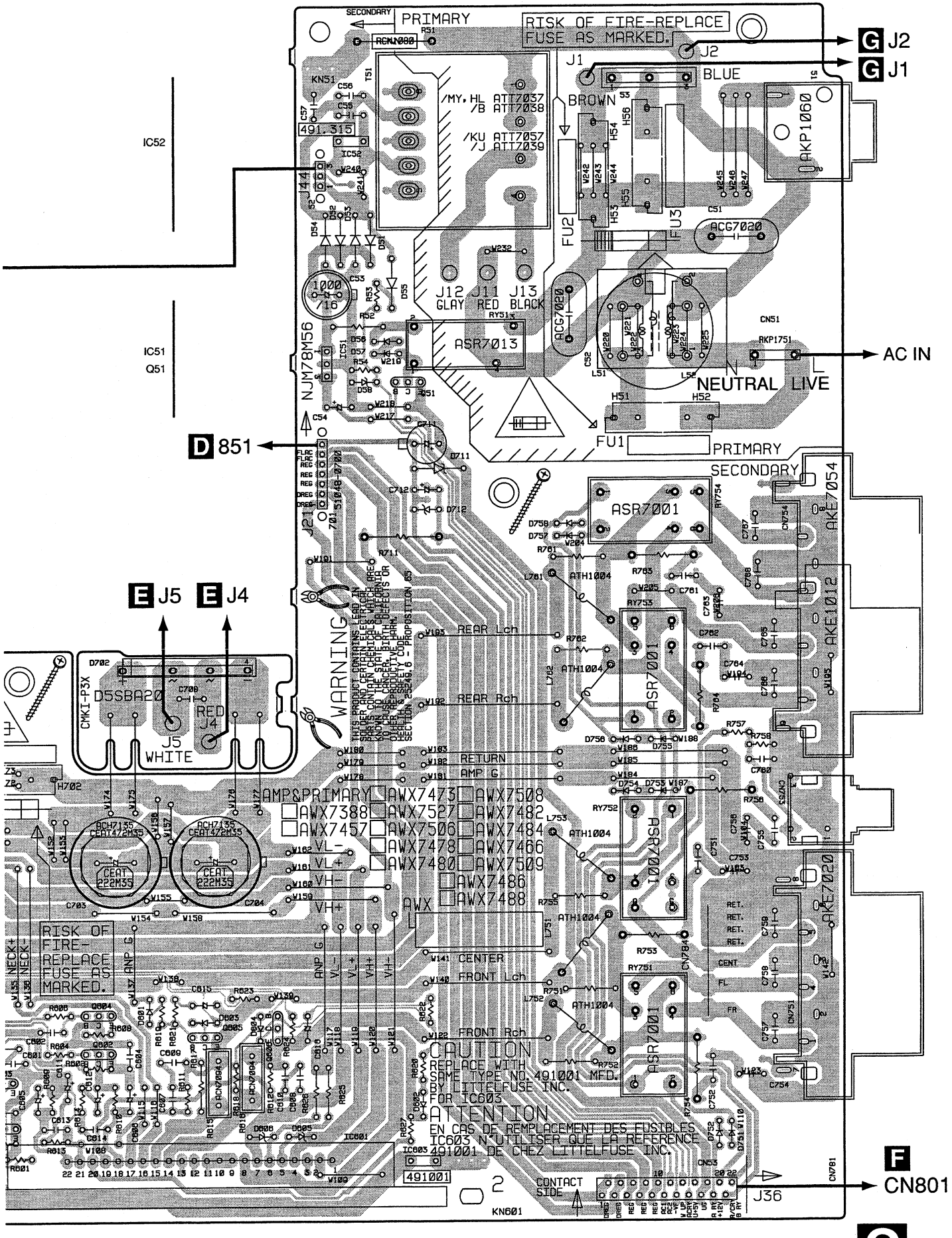
C J1 J2

D TRANS2 ASSY

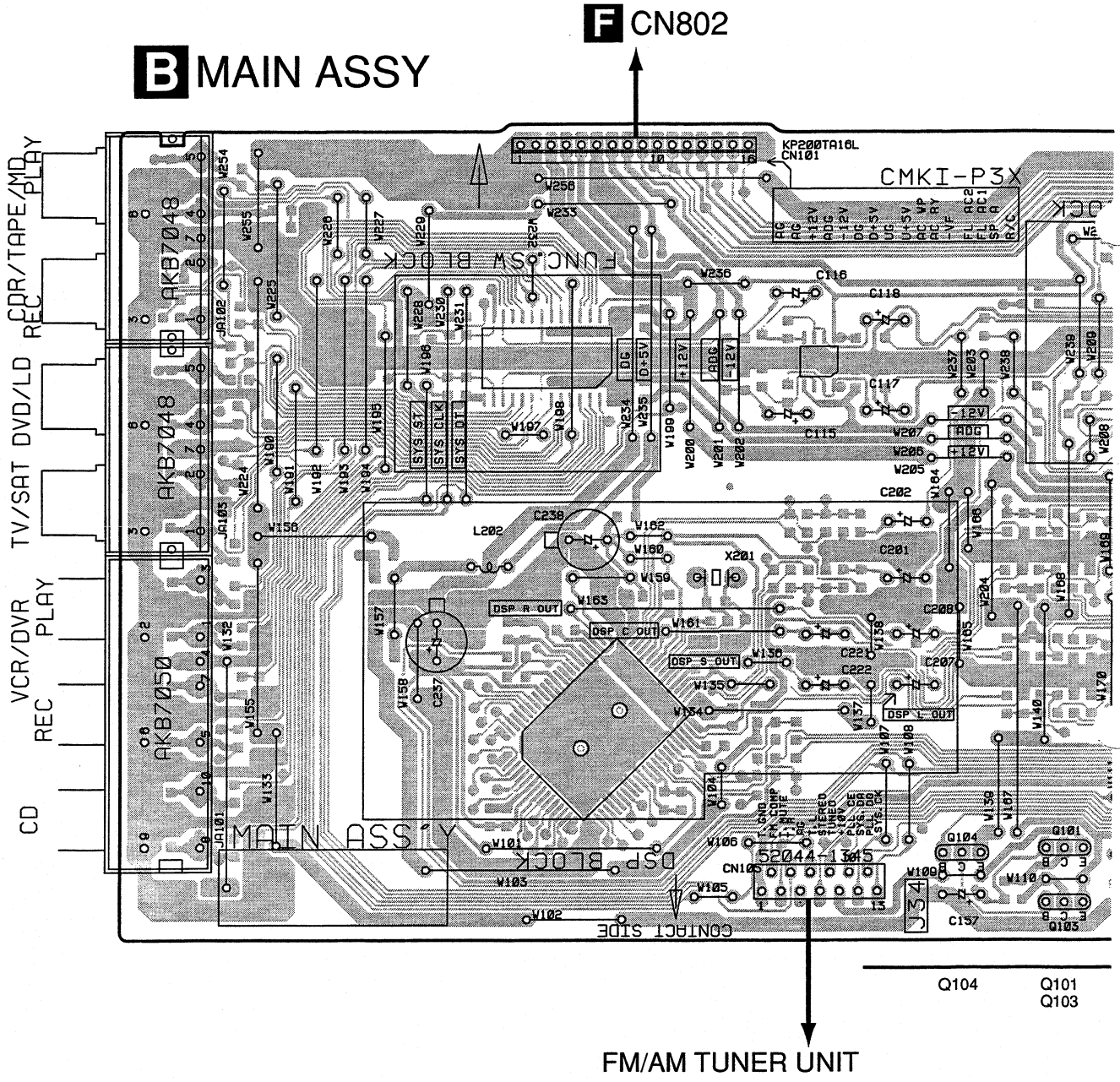


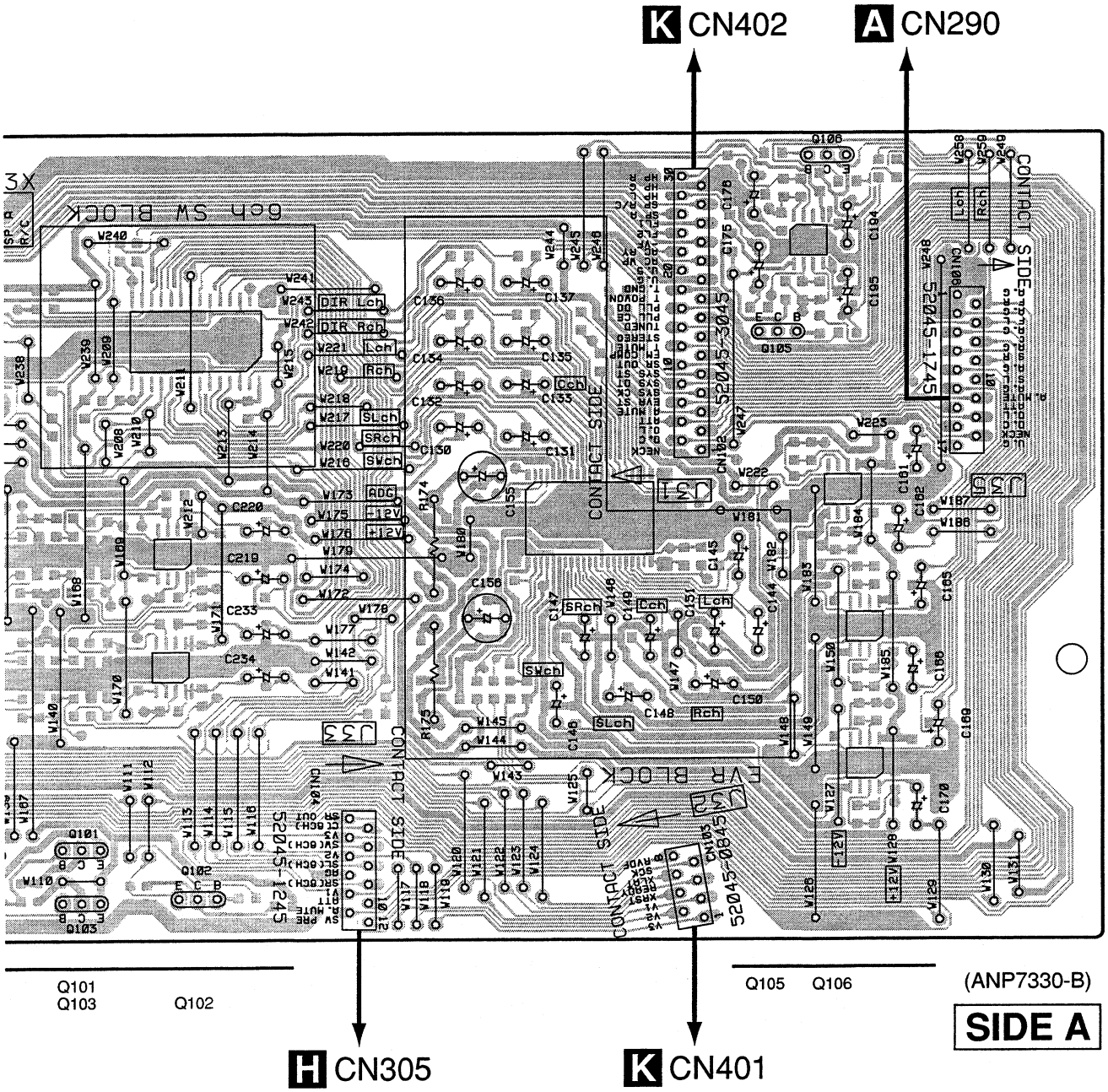
4.3 AMP INPUT, AMP&PRIMARY and MECHA SW ASSYS



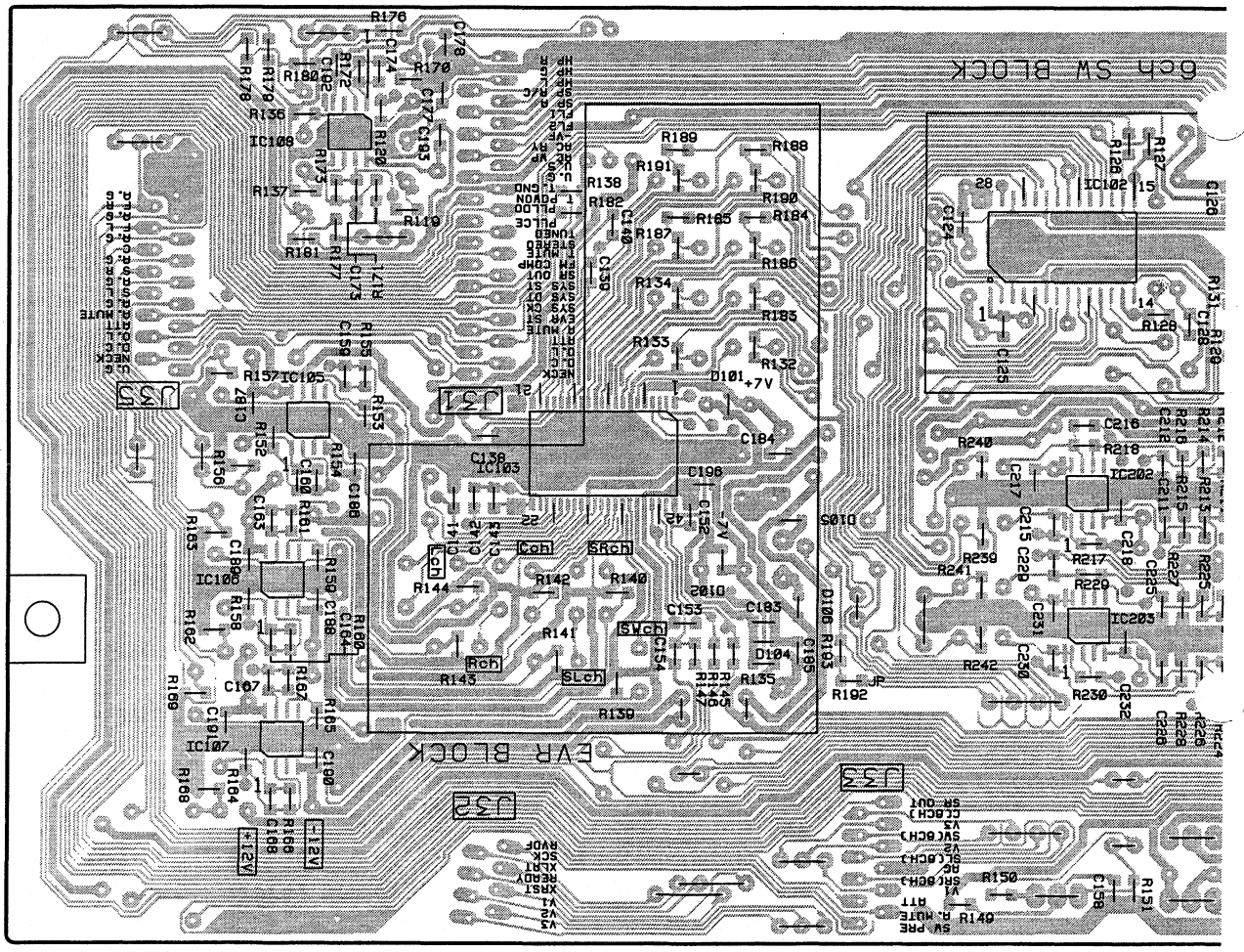

G J2
G J1
AC IN
NEUTRAL LIVE
D 851
E J5 E J4
F CN801
IC52
IC51
Q51
PRIMARY
SECONDARY
RISK OF FIRE-REPLACE FUSE AS MARKED.
J1
J2
BLUE
BROWN
/MY, HL ATT7037 /B ATT7038
/KU ATT7057 /J ATT7039
491 315
AKP1060
ACG7020
J12 J11 J13
GLAY RED BLACK
ASR7013
RKP1751
FU1
FU2
FU3
NJM78M56
AKE7054
AKE1012
AKE7020
ASR7001
ATH1004
REAR Lch
REAR Rch
RETURN
AMP G
CENTER
FRONT Lch
FRONT Rch
VL-
VL+
VH-
VH+
WARNING
CAUTION
REPLACE WITH SAME TYPE NO.491001 MFD. BY LITTELFUSE INC. FOR IC603
ATTENTION
EN CAS DE REMPLACEMENT DES FUSIBLES IC603 N'UTILISER QUE LA REFERENCE 491001 DE CHEZ LITTELFUSE INC.
D5SBA20
CMKI-P3X
RED
WHITE
J5
J4
CONTACT SIDE
J36
KN601
491001

4.4 MAIN ASSY


F CN802
B MAIN ASSY
CDR/TAPE/MD PLAY
REC
TV/SAT DVD/LD
VCR/DVR PLAY
REC
CD
AKB7048
AKB7048
AKB7050
KP200TA16L
CN101
CMKI-P3X
FUNC&SW BLOCK
DSP BLOCK
MAIN ASSY
CONTACT SIDE
DSP R OUT
DSP C OUT
DSP S OUT
DSP L OUT
52044-1345
CN105
Q104
Q101
Q103
FM/AM TUNER UNIT


K CN402
A CN290
H CN305
K CN401
Q101
Q103
Q102
Q105
Q106
(ANP7330-B)
SIDE A

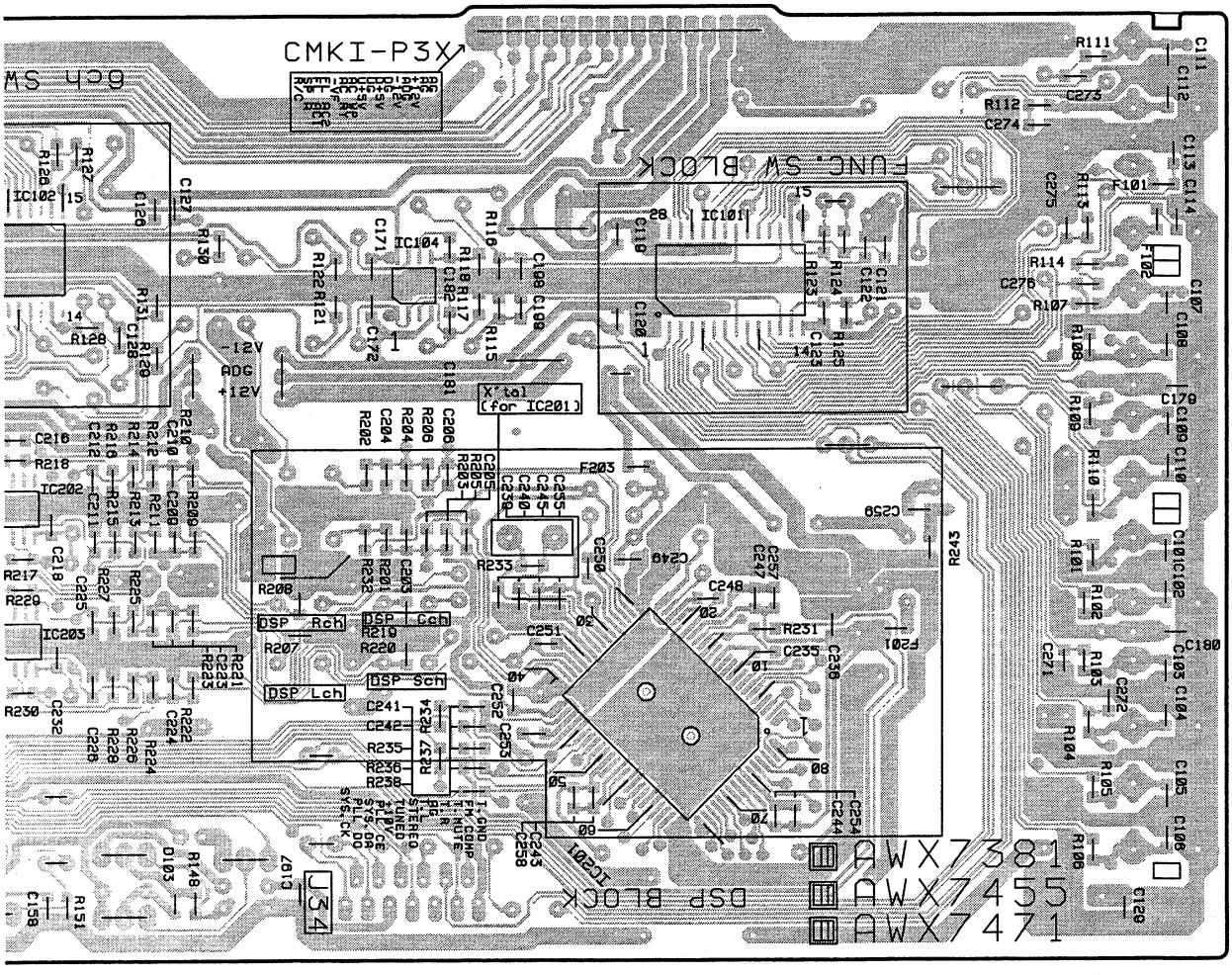
B MAIN ASSY



IC105 IC108
IC106
IC107

IC103

IC102
IC202 IC203

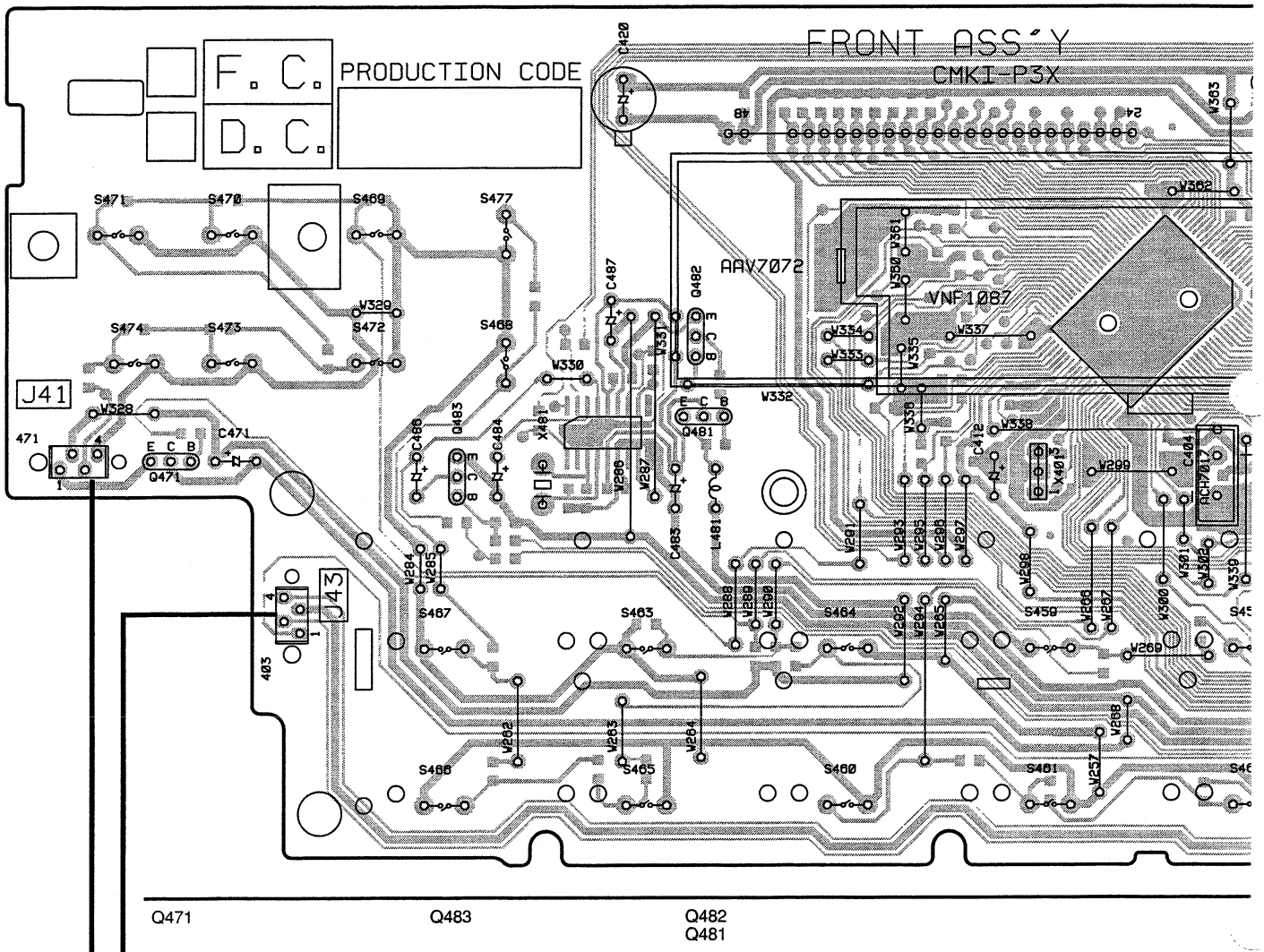


(ANP7330-B)

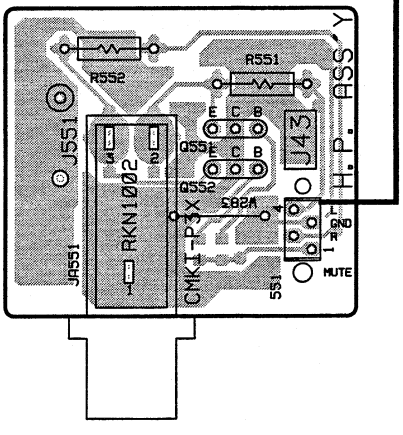
SIDE B

4.5 H.P., FRONT, R.ENCODER and POWER SW ASSYS

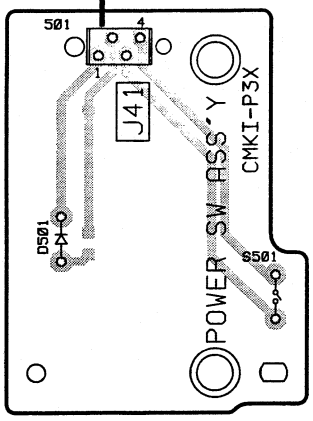
K FRONT ASSY

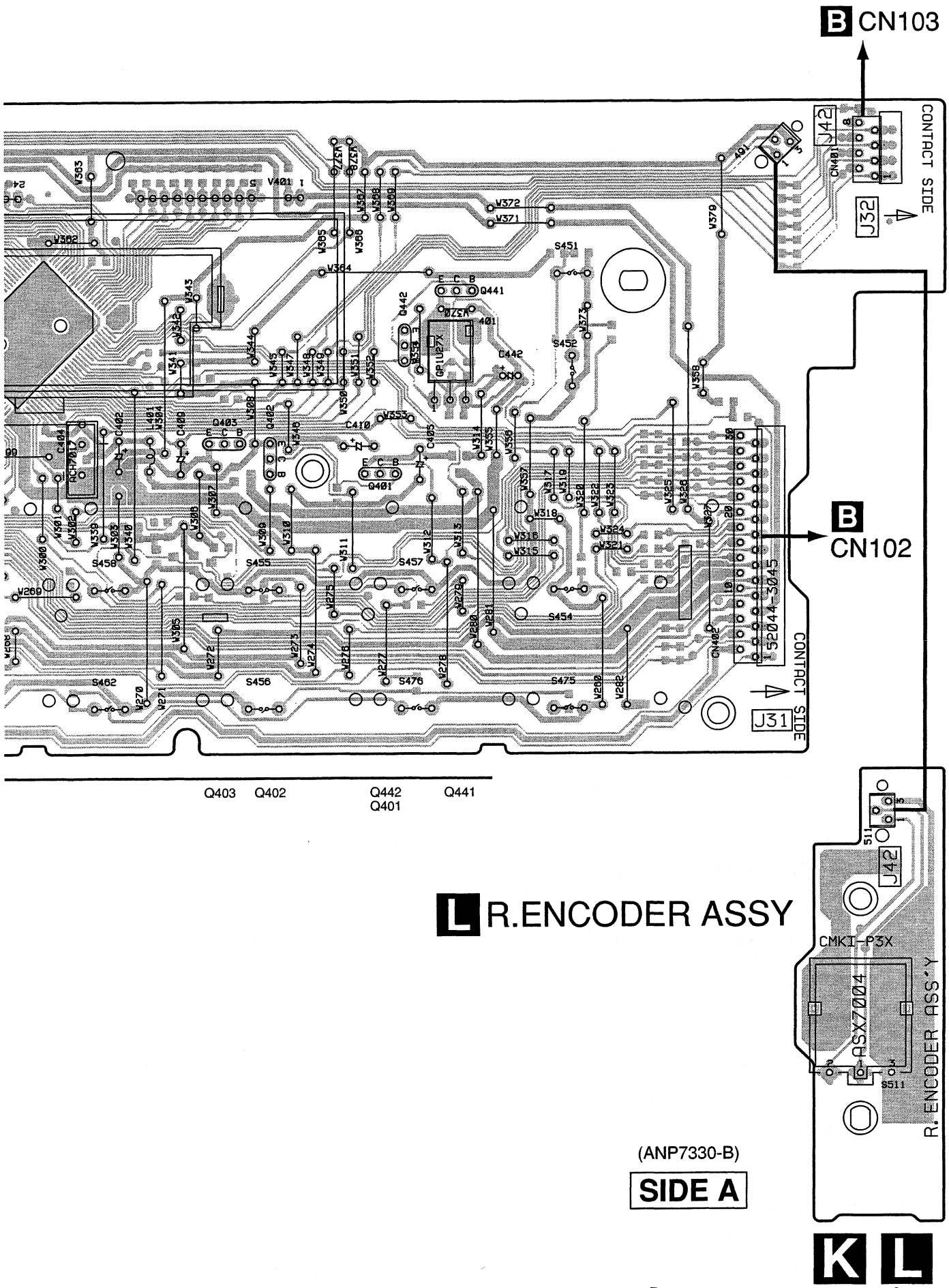


I H.P. ASSY

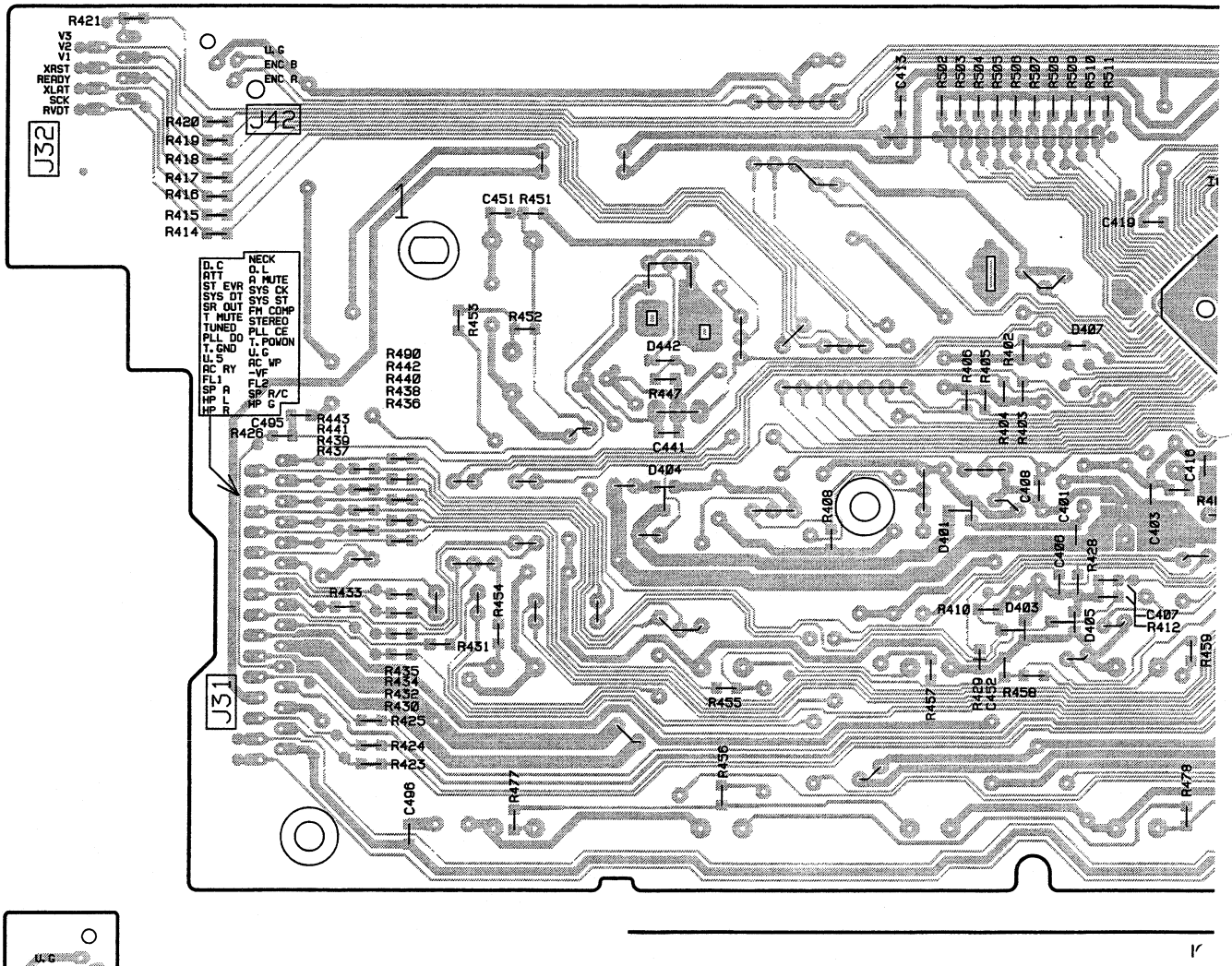


M POWER SW ASSY

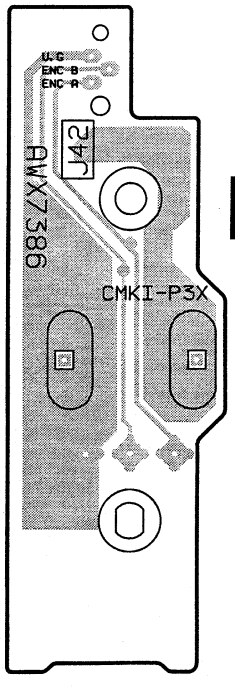



B CN103
CONTACT SIDE
J42
J32
B CN102
CONTACT SIDE
J31
S2044-3045
Q403 Q402 Q442 Q441
Q401
L R.ENCODER ASSY
CMKI-P3X
ASX7004
R.ENCODER ASS'Y
S511
(ANP7330-B)
SIDE A
K L

K FRONT ASSY

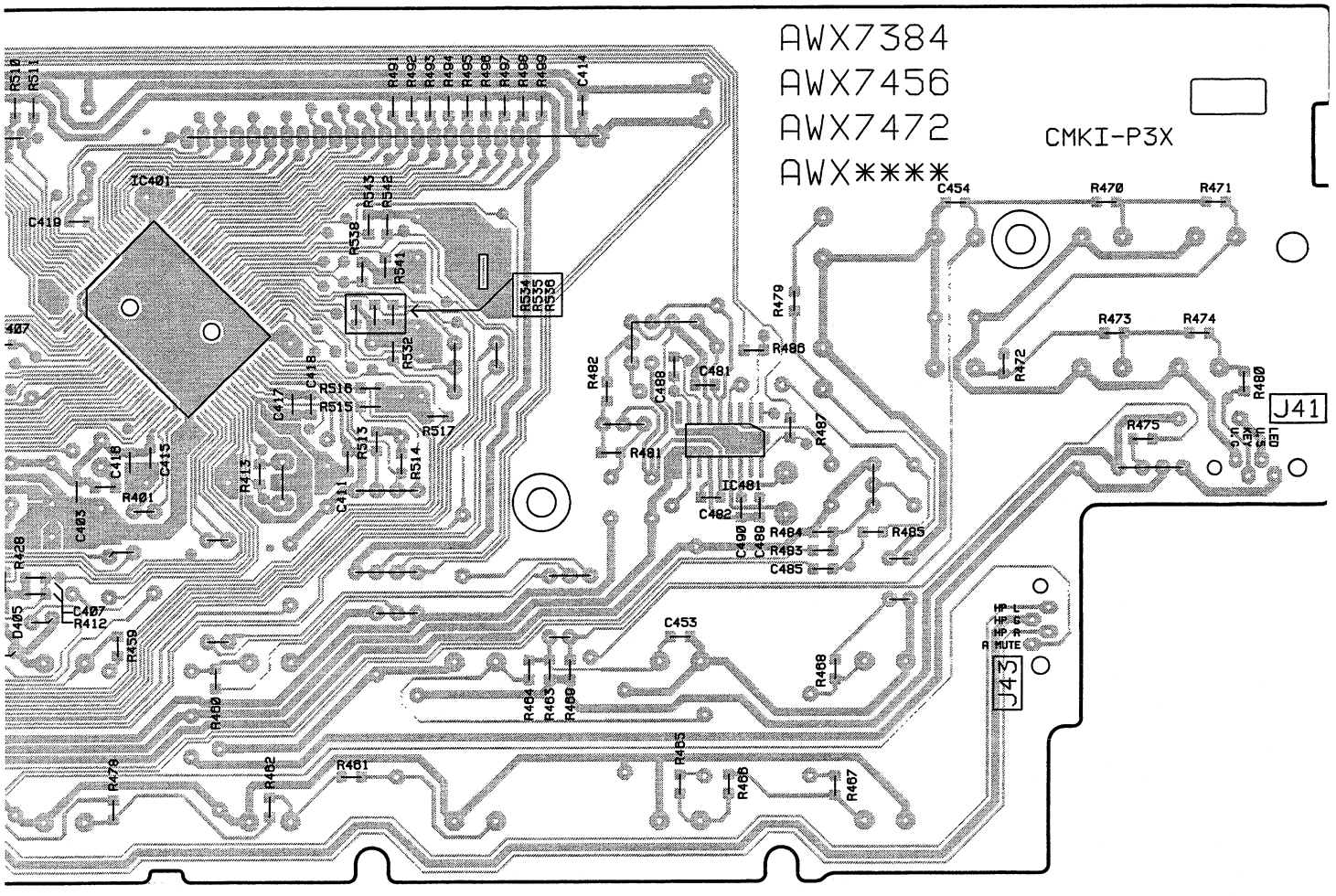


L R.ENCODER ASSY



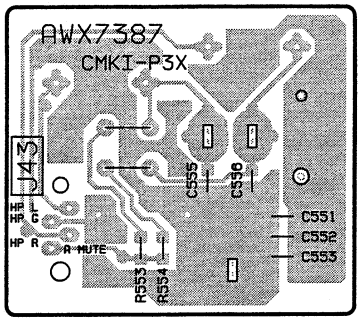
(ANP7330-B)

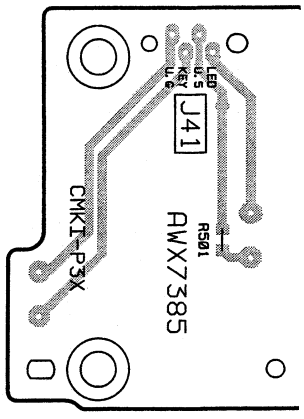
SIDE B



IC401 IC481

I H.P. ASSY





M POWER SW ASSY

5. PCB PARTS LIST

NOTES: ●*The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*

●*When ordering resistors, first convert resistance values into code form as shown in the following examples.*

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).

560 Ω → 56 × 10¹ → 561 ..... RD1/4PU [5][6][1] J
47k Ω → 47 × 10³ → 473 ..... RD1/4PU [4][7][3] J
0.5 Ω → R50 ..... RN2H [R][5][0] K
1 Ω → 1R0 ..... RS1P [1][R][0] K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k Ω → 562 × 10¹ → 5621 ..... RN1/4PC [5][6][2][1] F

Mark	No.	Description	Part No.
NSP		COMPLEX ASSY	AWK7519
		├ MAIN ASSY	AWX7381
		├ VIDEO&6CH IN ASSY	AWX7383
		├ FRONT ASSY	AWX7384
		├ POWER SW ASSY	AWX7385
NSP		├ R.ENCODER ASSY	AWX7386
NSP		├ H.P. ASSY	AWX7387
		└ MECHA SW ASSY	AWX7443
NSP		AMP&PS ASSY	AWK7520
NSP		├ AMP INPUT ASSY	AWX7382
		├ AMP&PRIMARY ASSY	AWX7388
		├ REGULATOR ASSY	AWX7389
		├ TRANS2 ASSY	AWX7391
NSP		├ TRANS1 ASSY	AWX7390
NSP		└ TRANS3 ASSY	AWX7392

A AMP INPUT ASSY

OTHERS

CN290	17P CONNECTOR	52044-1745
CN291	16P SOCKET	KP200TA16L

B MAIN ASSY

SEMICONDUCTORS

IC201	CXD2719Q
IC108	M5216FP
IC103	M62446FP
IC202, IC203	NJM4558MD
IC102	TC9163AF
IC101	TC9164AF
IC104–IC107	UPC4570G2
Q101, Q102	2SC1740S
Q105, Q106	2SC2878
D103, D105, D106	1SS355
D104	UDZS5.1B
D101, D102	UDZS6.8B

COILS AND FILTERS

F101, F102, F201, F203	DTF1067
L202	LFEA470J

CAPACITORS

C101–C114, C121–C123	CCSQCH101J50
C126–C128, C152–C154	CCSQCH101J50
C198, C199, C205, C206, C241	CCSQCH101J50
C239, C240	CCSQCH120J50
C173, C174	CCSQCH151J50
C271–C276	CCSQCH220J50
C159, C160, C163, C164, C167	CCSQCH221J50
C235	CCSQCH221J50
C211, C212, C225, C226	CCSQCH331J50
C229, C230	CCSQCH331J50
C242	CCSQCH471J50
C150, C151, C207, C208	CEAT100M50
C221, C222	CEAT100M50
C157, C175, C176	CEAT101M16
C219, C220	CEAT1R0M50
C170	CEAT220M25
C115, C116	CEAT2R2M50
C130–C137, C144–C149	CEAT3R3M50
C201, C202	CEAT470M16
C117, C118, C161, C162	CEAT470M25
C165, C166, C169	CEAT470M25
C155, C156	CEAT471M10
C237, C238	CEAT471M6R3
C194, C195, C233, C234	CEAT4R7M50
C168, C209, C210, C223, C224	CKSQYB102K50
C236	CKSQYB102K50
C119, C120, C124, C125, C129	CKSQYB103K50
C158, C171, C172, C177–C180	CKSQYB103K50
C183, C186–C193, C197	CKSQYB103K50
C217, C218, C231, C232, C245	CKSQYB103K50
C259	CKSQYB103K50
C254, C257, C258	CKSQYB105K10
C139, C142	CKSQYB153K50
C203, C204, C215, C216	CKSQYB331K50
C140, C143	CKSQYB334K16
C243, C244, C247–C253, C255	CKSQYB472K50
C184, C185	CKSQYB473K25
C138, C141	CKSQYB822K50

RESISTORS

⚠	R174, R175	RS1LMF101J
	Other Resistors	RS1/10S□□□J

OTHERS

CN105	13P CONNECTOR	52044-1345
CN103	8P CONNECTOR	52045-0845
CN104	12P CONNECTOR	52045-1245
CN106	17P CONNECTOR	52045-1745
CN102	30P CONNECTOR	52045-3045
JA102, JA103	PIN JACK(4P)	AKB7048
JA101	PIN JACK(6P)	AKB7050
CN101	16P SOCKET	KP200TA16L
X201	XTAL RES (OSC) (33.8688MHZ)	ASS7002

Mark	No.	Description	Part No.

C AMP&PRIMARY ASSY

SEMICONDUCTORS

⚠	IC52	PROTECTOR (315mA)	AEK7003
⚠	IC603	PROTECTOR (1A)	AEK7009
	IC51		NJM78M56FA
⚠	IC601		PAC010A
⚠	IC602		PAC011A
	Q703		2SA1145
	Q702		2SB1238X
	Q691, Q692		2SC1740S
	Q704		2SC1845
	Q605, Q606, Q633, Q655, Q656		2SC2240
	Q601–Q604, Q631, Q632		2SC2878
	Q651–Q654		2SC2878
	Q701		2SD1859X
	Q51		KRC101M
	D56, D57, D601–D604		1SS133
	D631, D632, D651–D654		1SS133
	D751–D756		1SS133
⚠	D701, D702		D5SBA20(B)
	D711		MTZJ22D
	D58		MTZJ5.1A
	D712		MTZJ5.1B
	D605, D606, D633, D634		MTZJ8.2A
⚠	D51–D55		S5688G

COILS AND FILTERS

	L751–L753, L761, L762		ATH1004
⚠	L52	FILTER	XTF3001

SWITCHES AND RELAYS

	RY751–RY753		ASR7001
⚠	RY51		ASR7013

CAPACITORS

	C707, C708	(0.01μF/AC250V)	ACG1005
⚠	C51, C52	(10000pF/AC250V)	ACG7020
	C701, C702	(4700μF/63V)	ACH7134
	C703, C704	(3300μF/42V)	ACH7135
	C607–C610, C634, C635		CCCSL120J50
	C657–C660		CCCSL120J50
	C613, C614, C637, C663, C664		CCCSL221J50
	C615, C616, C638, C665, C666		CEANP2R2M50
	C705, C706		CEAT100M2A
	C712		CEAT101M10
	C611, C612, C636, C661, C662		CEAT101M16
	C711		CEAT101M35
	C53		CEAT102M16
	C692		CEAT221M10
	C54		CEAT470M25
	C605, C606, C633, C655, C656		CEAT4R7M50
	C751–C756, C761–C764		CFTYA224J50
	C55–C57		CGCYX103M25
	C601, C602, C631, C651, C652		CKCYB102K50
	C691		CKCYB102K50
	C603, C604, C632, C653, C654		CKCYB331K50
	C757–C759, C765, C766		CQMBA472J50

Mark	No.	Description	Part No.

RESISTORS

⚠	R615, R616, R638, R665, R666	(0.22Ω/5W)	ACN7094
	R52		RD1/2PM270J
⚠	R751, R752, R755, R761, R762		RD1/4PMF101J
⚠	R753, R754, R756, R763, R764		RS1LMF4R7J
⚠	R711		RS2LMF182J
	Other Resistors		RD1/4PU□□□J

OTHERS

	53	3P CABLE HOLDER	51048-0300
	701	7P CABLE HOLDER	51048-0700
	CN53	18P CONNECTOR	52045-1845
	752	SPEAKER TERMINAL 4P	AKE1012
	CN751	SPEAKER TERMINAL 6P	AKE7020
	H51, H52	FUSE CLIP	AKR7001
⚠	T51	STANDBY TRANSFORMER	ATT7037
	J44	JUMPER WIRE 3P	D20PYY0325E
	CN601	16P PLUG	KM200TA16
	CN51	AC CODE SOCKET	RKP1751
	KN51, KN601	EARTH METAL FITTING	VNF1084

D TRANS2 ASSY

SEMICONDUCTORS

⚠	IC851, IC852	PROTECTOR (1.6A)	AEK7012

OTHERS

	851	7P CABLE HOLDER	51048-0700

E TRANS3 ASSY

TRANS3 ASSY has no service part.

F REGULATOR ASSY

SEMICONDUCTORS

	IC803	NJM78M05FA
	IC801	NJM78M12FA
	IC802	NJM79M12FA
	Q801, Q803	KRA103M
	Q802, Q804	KRC101M
⚠	D801–D804	S5688G

CAPACITORS

	C808	CEAT101M10
	C805, C806	CEAT101M16
	C802	CEAT102M25
	C801, C809	CEAT222M25
	C803, C804, C807	CGCYX103M25

RESISTORS

⚠	R801	RS1LMF6R8J

OTHERS

	CN801	18P CONNECTOR	52045-1845
	CN802	16P PLUG	KM200TA16
	CN803	5P PLUG	KM200TA5

VSX-409RDS

Mark	No.	Description	Part No.

G TRANS1 ASSY

TRANS1 ASSY has no service part.

H VIDEO&6CH IN ASSY

SEMICONDUCTORS

	IC301	NJM2279M
	IC302, IC303	NJM4558MD
	Q302	2SA1515
	Q303, Q304	2SC2878
	Q301	2SC3377
	D301, D302	UDZS6.2B

CAPACITORS

	C329–C332	CCSQCH101J50
	C301–C303, C307, C308	CEAT470M25
	C333–C336	CEAT4R7M50
	C314	CKSQYB102K50
	C313, C315, C337–C342	CKSQYB103K50
	C304, C305, C321–C328	CKSQYB221K50
	C309, C310	CKSQYB473K16

RESISTORS

⚠	R309, R310	RS1LMF151J
	Other Resistors	RS1/10S□□□J

OTHERS

CN305	12P CONNECTOR	52044-1245
CN304	PIN JACK (4P)	AKB7087
CN301	6P PIN JACK	AKB7123
CN306	5P SOCKET	KP200TA5L
JA303	JACK	RKN1004

I H.P. ASSY

SEMICONDUCTORS

	Q551, Q552	2SC2878

CAPACITORS

	C552	CKSQYB103K50
	C551	CKSQYB104K16
	C555, C556	CKSQYB223K50

RESISTORS

⚠	R551, R552	RS1/2LMF121J
	Other Resistors	RS1/10S□□□J

OTHERS

551	CABLE HOLDER(4P)	51063-0405
JA551	JACK	RKN1002

J MECHA SW ASSY

SWITCHES AND RELAYS

S591	ASG7014

CAPACITORS

C591, C592	CKSQYF103Z50

Mark	No.	Description	Part No.

OTHERS

CN591	3PJUMPER CONNECTOR	52151-0310

K FRONT ASSY

SEMICONDUCTORS

IC481	BU1923F
IC401	PDG246A
Q481	2SA1515
Q483	2SC1740S
Q401, Q402, Q442, Q471	KRA103M
Q403, Q441, Q482	KRC101M
D407, D442	1SS355
D403, D405	DAN217
D401, D404	DAP202K

COILS AND FILTERS

L401, L481	LFEA2R2J

SWITCHES AND RELAYS

S451, S452, S454–S477	XSG3001

CAPACITORS

C404	(0.047F/5.5V)	ACH7017
C420	(220µF/35V)	ACH7101
C495		CCSQCH102J50
C489, C490		CCSQCH270J50
C483, C487		CEAT101M10
C486		CEAT1R0M50
C402, C405		CEAT221M6R3
C409, C410, C484		CEAT2R2M50
C412		CEAT470M35
C442		CEJA470M10
C451–C454, C481, C482		CKSQYB102K50
C401, C403, C411, C415, C417		CKSQYB103K50
C441		CKSQYB103K50
C496		CKSQYB223K50
C485		CKSQYB472K50
C406, C407, C416, C418, C419		CKSQYB473K16
C488		CKSQYB561K50
C408		CKSQYF104Z25

RESISTORS

All Resistors	RS1/10S□□□J

OTHERS

491	CABLE HOLDER (3P)	51063-0305
403, 471	CABLE HOLDER (4P)	51063-0405
CN401	8P CONNECTOR	52044-0845
CN402	30P CONNECTOR	52044-3045
V401	FL TUBE	AAV7072
X481	CRYSTAL RESONATOR (4.332MHz)	ASS7004
X401	CERAMIC RESONATOR (7.2MHz)	ASS7018
401	REMOTE RECEIVER UNIT	GP1U27X

Mark	No.	Description	Part No.
L	**R.ENCODER ASSY**		
	SWITCHES AND RELAYS		
	S511		ASX7004
	OTHERS		
	511	CABLE HOLDER (3P)	51063-0305
M	**POWER SW ASSY**		
	SEMICONDUCTORS		
	D501		BR3371XJ30A
	SWITCHES AND RELAYS		
	S501		XSG3001
	RESISTORS		
	All Resistors		RS1/10S□□□J
	OTHERS		
	501	CABLE HOLDER (4P)	51063-0405

6. ADJUSTMENT

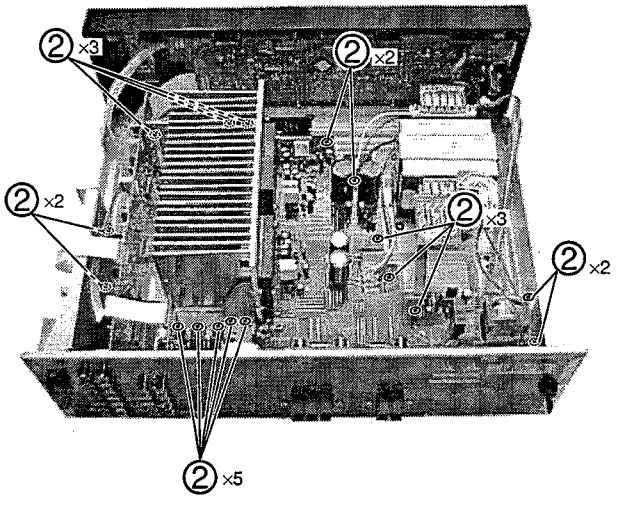
There is no information to be shown in this chapter.

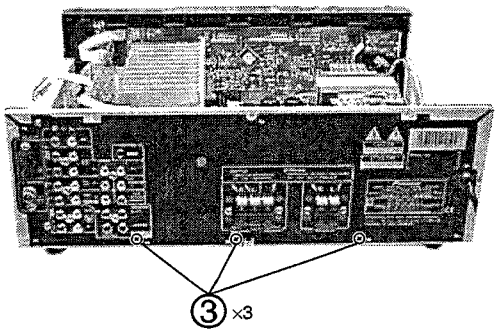
7. GENERAL INFORMATION

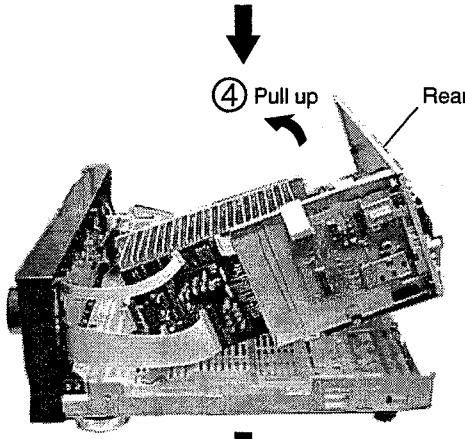
7.1 DISASSEMBLY

■ Diagnosis

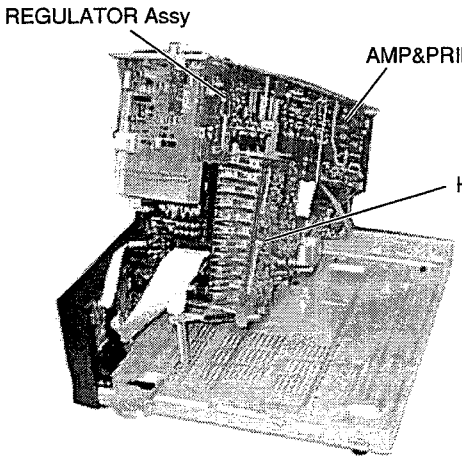
① Remove the Bonnet (seven screws).



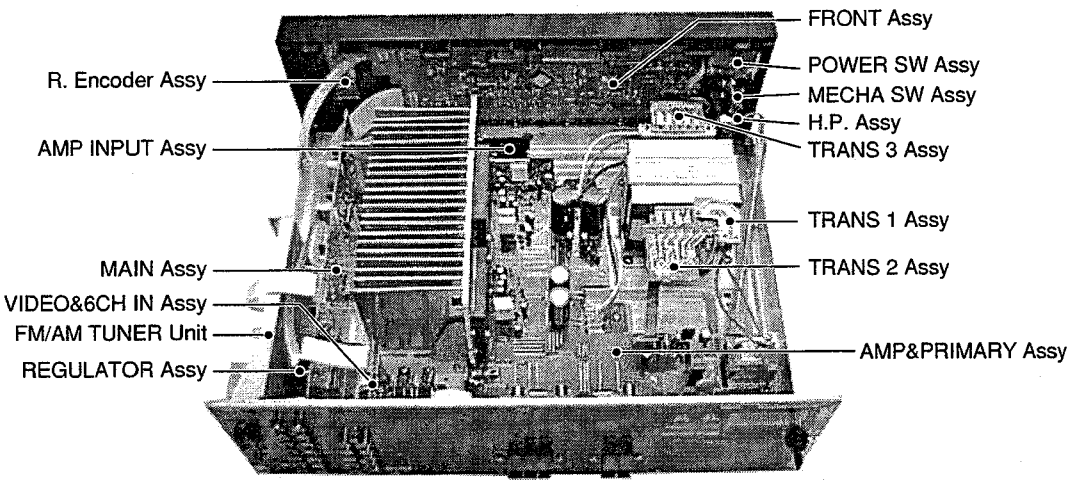




⑤ Diagnosis



■ PCB Location



7.2 PARTS

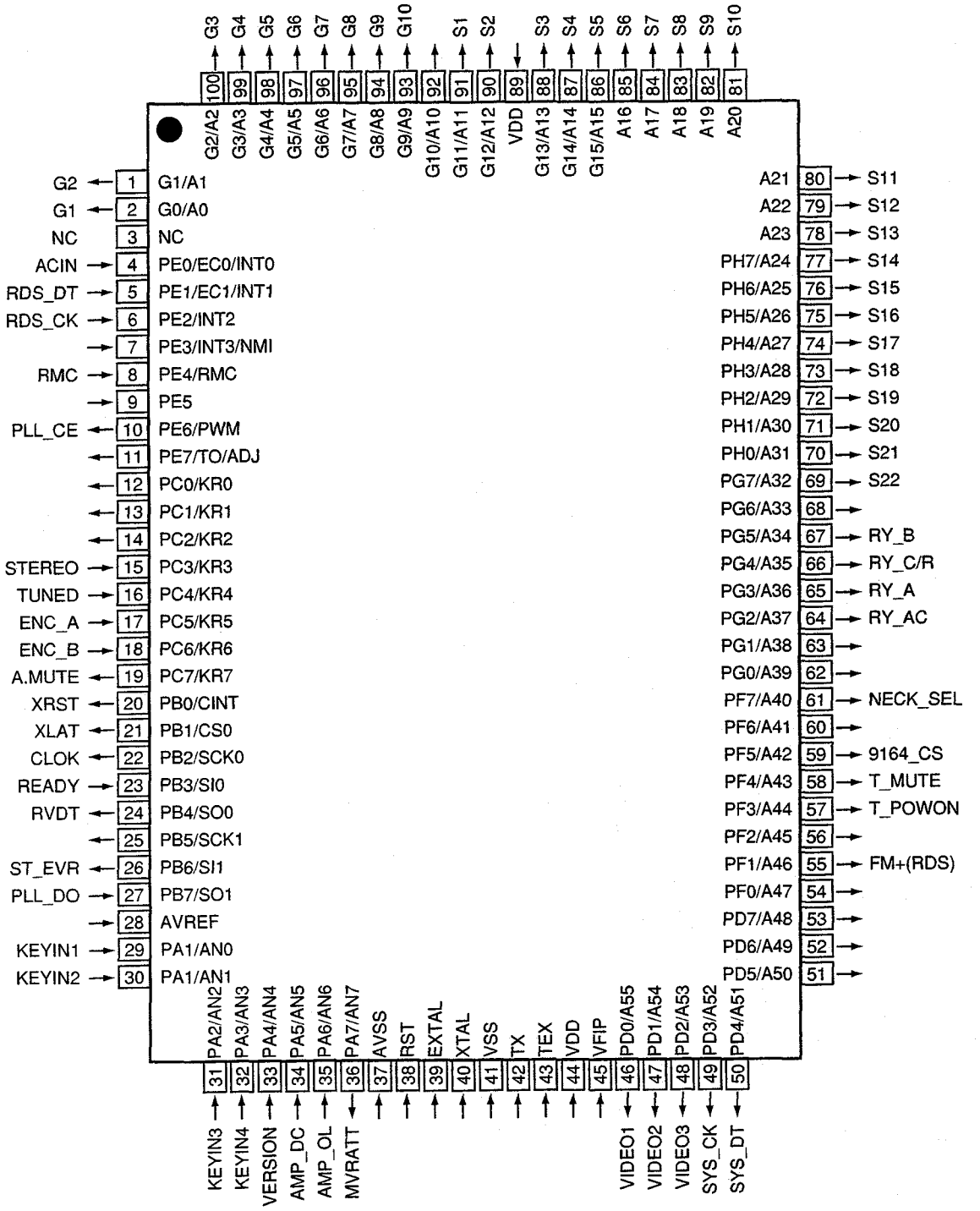
7.2.1 IC

• The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

■ PDG246A (FRONT ASSY : IC401)

• System Control IC

• Pin Arrangement (Top View)



• Pin Function

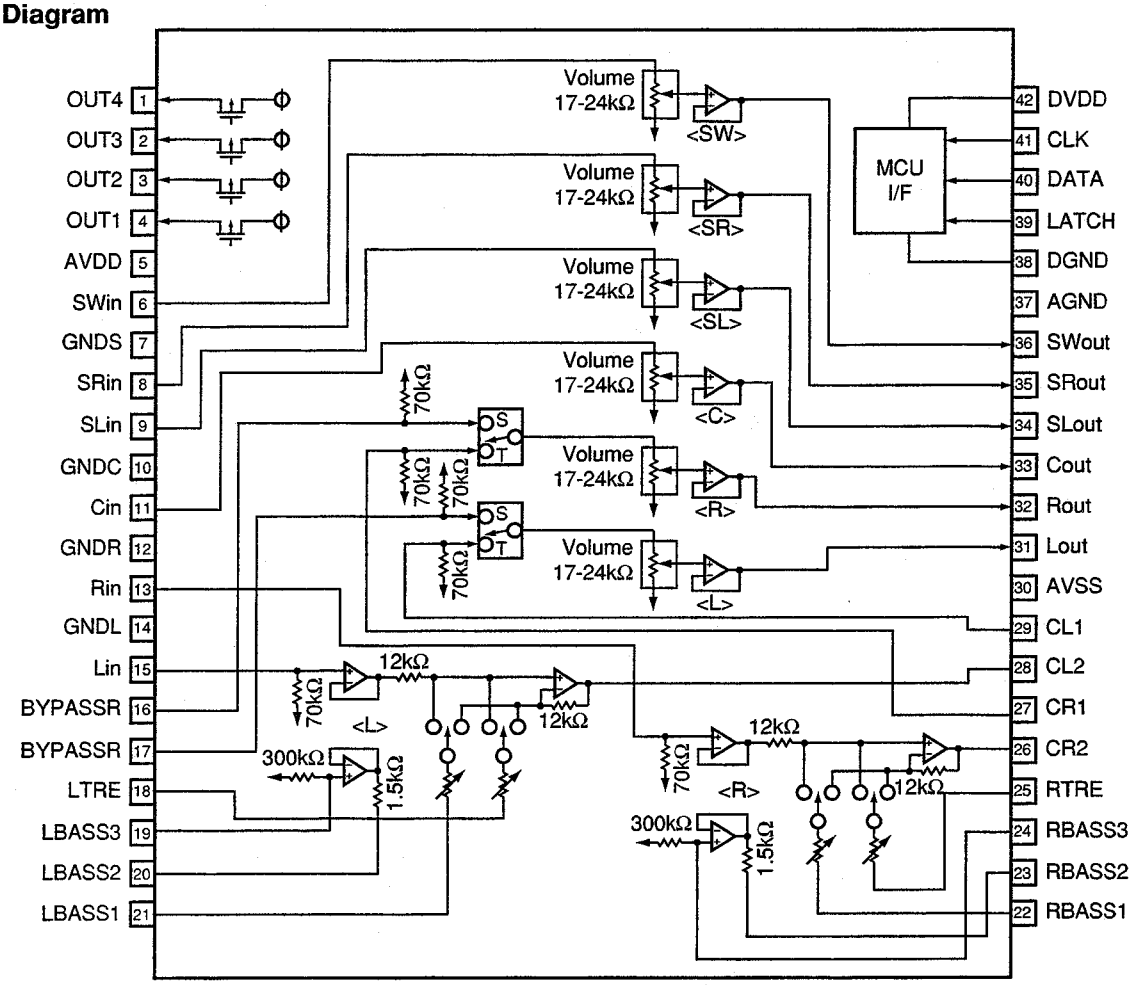
No.	Pin Name	I/O	Pin Function	Active
1	G2	O	Grid output 2	H
2	G1	O	Grid output 1	H
3	NC	–	Connect to VDD	
4	ACIN	I	AC pulse input	
5	RDS_DT	I	Serial control DATA signal of RDS communication	
6	RDS_CK	I	Serial control CLOCK signal of RDS communication	
7		I	Not used	
8	RMC	I	Remote control signal input (no-carrier signal)	
9		I	Not used	
10	PLL_CE	O	Chip select signal for communication with LC72131 (tuner)	H
11		O	Not used	
12		O	Not used	
13		O	Not used	
14		I	Not used	
15	STEREO	I	Stereo/Monoral signal judgment signal	
16	TUNED	I	TUNED information	
17	ENC_A	I	Rotary encoder signal input A	
18	ENC_B	I	Rotary encoder signal input B	
19	AMUTE	O	Audio mute	L
20	XRST	O	DSP reset	L
21	XLAT	O	Chip select for control of DSP	L
22	CLOK	O	Clock signal for communication with DSP	H
23	READY	I	READY input for communication with DSP	
24	RVDT	O	DATA output signal for communication with DSP	H
25		I	Not used	
26	ST_EVR	O	Strobe signal for communication with electric volume IC	H
27	PLL_DO	I	Data input signal for communication with LC72131 (tuner)	
28	AVref	–	Connect to VDD	
29	KEYIN1	I	Key input A/D conversion port 1	
30	KEYIN2	I	Key input A/D conversion port 2	
31	KEYIN3	I	Key input A/D conversion port 3	
32	KEYIN4	I	Key input A/D conversion port 4	
33	VER 1	I	Destination switch (A/D input)	
34	AMP_DC	I	DC abnormality detection of protection circuit (L : Abnormality detection)	
35	AMP_OL	I	Over-load detection of protection circuit (L : Abnormality detection)	
36	MVRATT	O	ATT control of master volume (L : Less than -15dB)	H
37	AVSS	–	Connect to VSS	
38	RST	–	Reset	
39	EXTAL	–	Connect to the oscillator (7.2MHz)	
40	XTAL	–		
41	VSS	–	Connect to VSS	
42	TX	–	Open	
43	TEX	–	Connect to VSS	
44	VDD	–	+5V	
45	VFDP	–	-30V	
46	VIDEO1	O	NJM2296D control	H
47	VIDEO2			
48	VIDEO3			
49	SYS_DT	O	Data signal for communication with M62446, TC9163, TC9164 and PLL	H
50	SYS_CK	O	Clock signal for communication with M62446, TC9163, TC9164 and PLL	H

No.	Pin Name	I/O	Pin Function	Active
51		O	Not used	H
52		O	Not used	H
53		O	Not used	H
54		O	Not used	H
55	FM+(RDS)	O	Tr switch ON/OFF for power supply of RDS decoder (L : AM, power OFF , H : Other)	H
56		O	Not used	
57	T_POWON	O	Tuner module ON/OFF (North America model only)	H
58	T_MUTE	O	Tuner mute	H
59	9164 CS	O	TC9163, TC9164 Chip select	H
60		O	Not used	
61	NECK_SEL	O	5.1ch and surround mode / Stereo	H/L
62		O	Not used	H
63		O	Not used	H
64	RY_AC	O	AC relay ON/OFF	H
65	RY_A	O	Speaker A relay ON/OFF	H
66	RY_C/R	O	Rear/Center Speaker relay ON/OFF	H
67		O	Not used	H
68		O	Not used	H
69	S22	O	Segment output 22	H
70	S21		Segment output 21	
71	S20		Segment output 20	
72	S19		Segment output 19	
73	S18		Segment output 18	
74	S17		Segment output 17	
75	S16		Segment output 16	
76	S15		Segment output 15	
77	S14		Segment output 14	
78	S13		Segment output 13	
79	S12		Segment output 12	
80	S11		Segment output 11	
81	S10		Segment output 10	
82	S9		Segment output 9	
83	S8		Segment output 8	
84	S7		Segment output 7	
85	S6		Segment output 6	
86	S5		Segment output 5	
87	S4		Segment output 4	
88	S3		Segment output 3	
89	VDD	–	5V	
90	S2	O	Segment output 2	H
91	S1		Segment output 1	
92			Not used (Fixed Vfdp)	
93	G10	O	Grid output 10	H
94	G9		Grid output 9	
95	G8		Grid output 8	
96	G7		Grid output 7	
97	G6		Grid output 6	
98	G5		Grid output 5	
99	G4		Grid output 4	
100	G3		Grid output 3	

■ M62446FP (MAIN ASSY : IC103)

- **Sound Controller IC**

- **Block Diagram**



- **Pin Function**

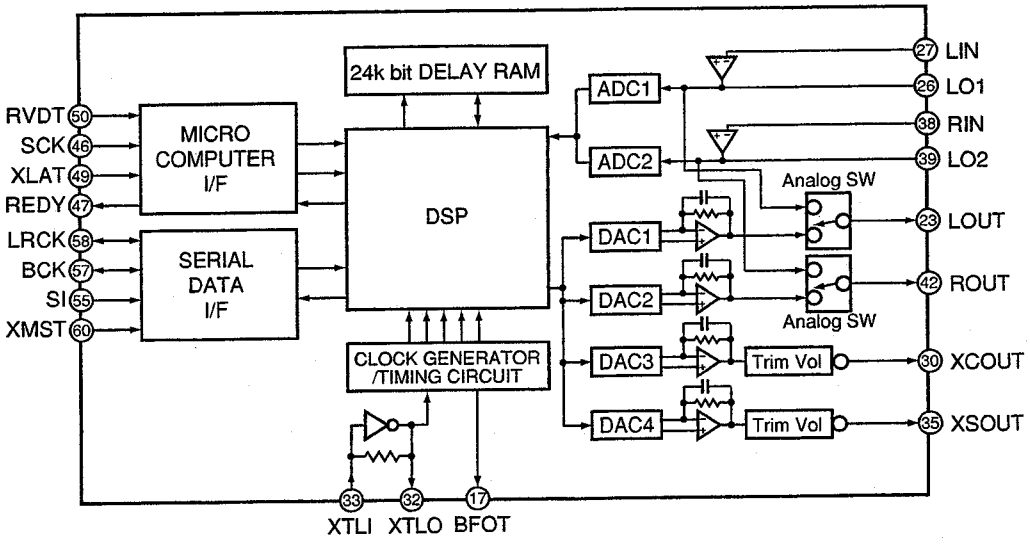
No.	Pin Name	Function
1	OUT4	Output port (open drain of PchTr)
2	OUT3	
3	OUT2	
4	OUT1	
5	AVDD	Analog positive power supply port
7	GNDS	GND (connect to analog ground)
10	GNDC	
12	GNDR	
14	GNDL	
6	SWin	Volume input
8	SRin	
9	SLin	
11	Cin	
36	SWout	Volume output
35	SRout	
34	SLout	
33	Cout	
13	Rin	TONE input
15	Lin	
16	BYPASSR	L and R Volume input at bypass
17	BYPASSL	
31	Lout	L output
32	Rout	R output

No.	Pin Name	Function
18	LTRE	TONE TREBLE frequency control port
25	RTRE	
19	LBASS3	TONE BASS frequency control port
24	RBASS3	
20	LBASS2	
23	RBASS2	
21	LBASS1	
22	RBASS1	
26	CR2	TONE output port
28	CL2	
27	CR1	L and R volume input
29	CL1	
31	Lout	L output
32	Rout	R output
30	AVSS	Analog negative power supply port
37	AGND	Analog ground port
38	DGND	Digital ground port
39	LATCH	Latch input port
40	DATA	Data input port
41	CLK	Clock input port for data transmission
42	DVDD	Digital power supply port

■ CXD2719Q (MAIN ASSY : IC201)

• Dolby Pro Logic Surround Decoder IC

• Block Diagram



• Pin Function

No.	Pin Name	I/O	Function
1-3	T.P	O	Monitor pin for test Normally, outputs "L".
4	VSS0	–	Digital ground
5-8	T.P	O	Monitor pin for test Normally, outputs "L".
9	TST0	I	Test pin Normally, fix to L.
10	VDD0	–	Digital power supply
11	VSS1	–	Digital ground
12	TST1	I	Test pin Normally, fix to "L".
13	TST2	I	Test pin Normally, fix to "L".
14	TST3	I	Test pin Normally, fix to "L".
15	TST4	I	Test pin Normally, fix to "L".
16	XRST	I	System reset input L : reset.
17	BFOT	O	Clock and divided frequency output (384/768/256/512 fs)
18	CSL1	I	Test pin Normally, fix to "H".
19	CSL2	I	Test pin Normally, fix to "L".
20	VSS2	–	Digital ground
21	AVS3	–	Ground for L-ch D/A converter
22	AVD3	–	Power supply for L-ch D/A converter
23	LOUT	O	L-ch A/D converter output
24	AVD1	–	Power supply for L-ch A/D converter
25	AVS1	–	Ground for L-ch A/D converter
26	LO1	O	OP amp. inverting output for LPF of L-ch A/D converter
27	LIN	I	Analog input of L-ch A/D converter
28	AVD5	–	Power supply for C-ch D/A converter
29	AVS5	–	Ground for C-ch D/A converter
30	XCOUT	O	C-ch D/A converter output
31	AVDX	–	Analog power supply for master clock
32	XTLO	O	Crystal oscillation circuit output

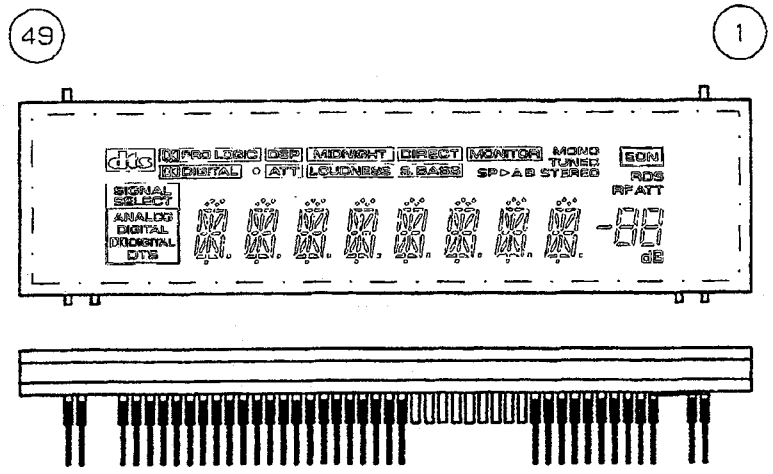
No.	Pin Name	I/O	Function
33	XTLI	I	Crystal oscillation circuit input
34	AVSX	–	Analog ground for master clock
35	XSOUT	O	S-ch D/A converter output
36	AVS6	–	Ground for S-ch D/A converter
37	AVD6	–	Power supply for S-ch D/A converter
38	RIN	I	Analog input of R-ch A/D converter
39	LO2	O	OP amp. inverting output for LPF of R-ch A/D converter
40	AVS2	–	Ground for R-ch A/D converter
41	AVD2	–	Power supply for R-ch A/D converter
42	ROUT	O	R-ch D/A converter output
43	AVD4	–	Power supply for R-ch D/A converter
44	AVS4	–	Ground for R-ch D/A converter
45	VSS3	–	Digital ground
46	SCK	I	Shift clock input of microprocessor interface
47	REDY	O	Transfer permission signal output of microprocessor interface L : Transfer prohibition
48	T.P	O	Monitor pin for test Normally, outputs "Hi-Z".
49	XLAT	I	Latch input of microprocessor interface
50	RVDT	I	Data input of microprocessor interface
51	XS24	I	24/32 bit slot selection of serial data L : 24 bit slot (It is effective at slave mode.)
52	VDD1	–	Digital power supply
53	VSS4	–	Digital ground
54	T.P	–	Monitor pin for test Normally, outputs "L".
55	SI	I	Serial data input of 1 sampling 2 channel
56	T.P	I	Input pin for test Normelly, outputs "L".
57	BCK	I/O	Serial bit transfer clock of serial input/output data SI and SO
58	LRCK	I/O	Sampling frequency clock of serial input/output data SI and SO
59	VSS5	–	Digital ground
60	XMST	I	Master/slave mode switching input of BCK and LRCK L : master mode
61-63	T.P	O	Monitor pin for test Normally, outputs "L".
64	VSS6	–	Digital ground
65-72	T.P	O	Monitor pin for test Normally, outputs "L".
73	VDD2	–	Digital power supply
74	VSS7	–	Digital ground
75-80	T.P	O	Monitor pin for test Normally, outputs "L".

7.2.2 DISPLAY

■ AAV7072 (FRONT ASSY : V401)

- **FL DISPLAY**

● Pin Assignment

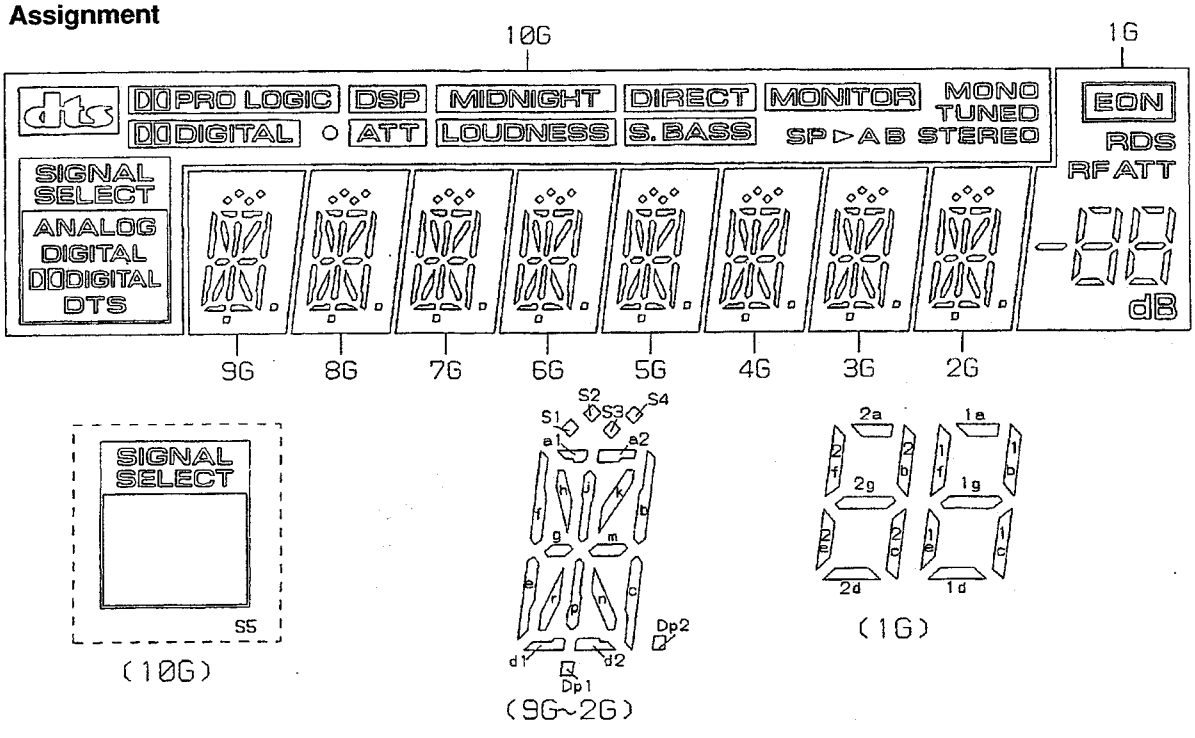


● Pin Connection

PIN NO.	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
CONNECTION	F2	F2	P	N	P2	P2	P1	P0	P9	P8	P7	P6	P5	P4	P3	P2	P1	P0	P9	P8	P7	P6	P5	P4	P3	P2	P1	NX	NX	NX	NX	NX	NX	NX	NX	NX	10 G	9 G	8 G	7 G	6 G	5 G	4 G	3 G	2 G	1 G	NP	NP	F1	F1

NOTE 1) F1,F2 --- Filament
2) NP ------ No pin
3) NX ------ No extend pin
4) DL ------ Datum Line
5) 1G~10G --- Grid

● Grid Assignment



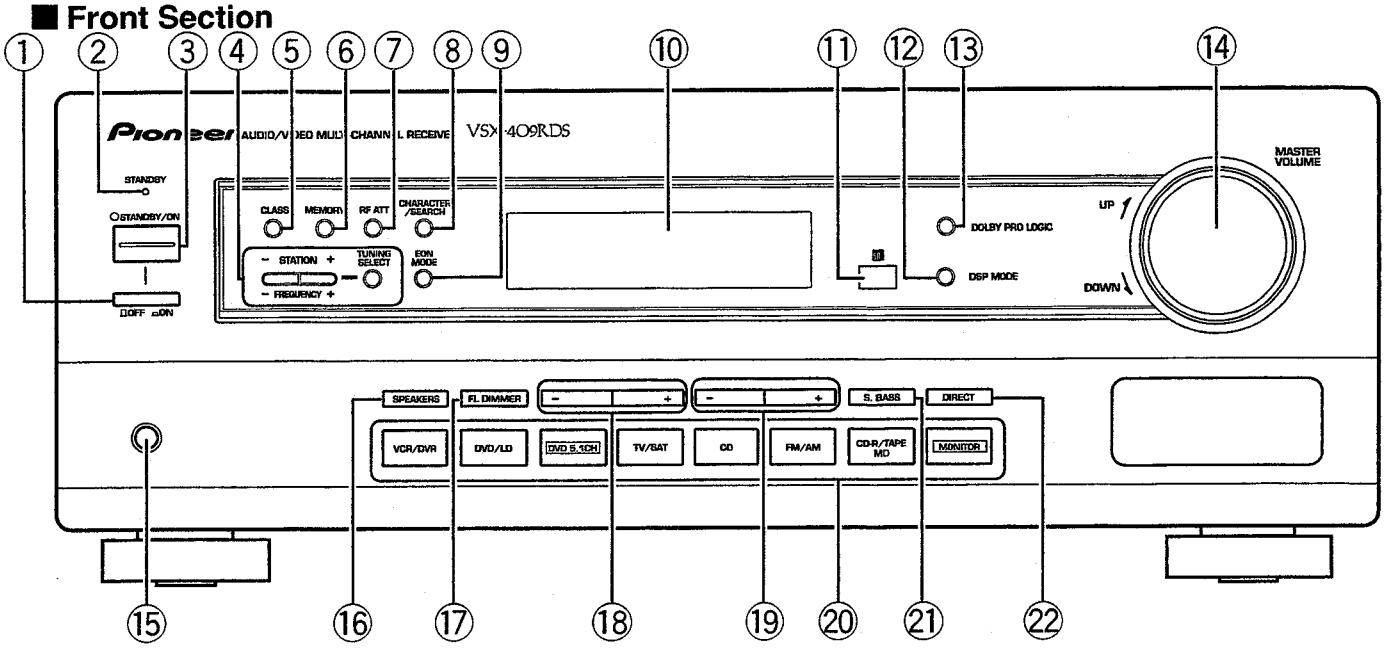
• Anode Connection

	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
P1	STEREO	a1	a1	a1	a1	a1	a1	a1	a1	dB
P2	TUNED	a2	a2	a2	a2	a2	a2	a2	a2	2a
P3	MONO	h	h	h	h	h	h	h	h	2b
P4	B	j	j	j	j	j	j	j	j	2f
P5	A	k	k	k	k	k	k	k	k	2g
P6	SP ▷	b	b	b	b	b	b	b	b	2c
P7	MONITOR	f	f	f	f	f	f	f	f	2e
P8	S.BASS	m	m	m	m	m	m	m	m	2d
P9	DIRECT	g	g	g	g	g	g	g	g	1a
P10	LOUDNESS	c	c	c	c	c	c	c	c	1b
P11	MIDNIGHT	e	e	e	e	e	e	e	e	1f
P12	ATT	r	r	r	r	r	r	r	r	1g
P13	DSP	p	p	p	p	p	p	p	p	1c
P14	○	n	n	n	n	n	n	n	n	1e
P15	DIGITAL	d1	d1	d1	d1	d1	d1	d1	d1	1d
P16	PRO LOGIC	d2	d2	d2	d2	d2	d2	d2	d2	◁
P17	DTS	Dp2	Dp2	Dp2	Dp2	Dp2	Dp2	Dp2	Dp2	RDS
P18	DIGITAL	Dp1	Dp1	Dp1	Dp1	Dp1	Dp1	Dp1	Dp1	RF ATT
P19	DIGITAL	S1	S1	S1	S1	S1	S1	S1	S1	EON
P20	ANALOG	S4	S4	S4	S4	S4	S4	S4	S4	(EON)
P21	S5	S2	S2	S2	S2	S2	S2	S2	S2	-
P22	dts	S3	S3	S3	S3	S3	S3	S3	S3	-

8. PANEL FACILITIES AND SPECIFICATIONS

8.1 PANEL FACILITIES

■ Front Section



① **MAIN POWER button**
Push to send electricity to the receiver. Note the STANDBY/ ON button below actually turns the receiver on and standby.

② **STANDBY indicator**
Lights when the receiver is in standby mode (note that the receiver consumes a small amount of power (1W) in standby mode).

③ ⏻ **STANDBY/ON button**
Switches the receiver between on and standby.

④ **STATION (+/–), FREQUENCY (+/–), TUNING SELECT buttons**
STATION (+/–)
Selects station memories when using the tuner.
FREQUENCY (+/–)
Selects the frequency when using the tuner.
TUNING SELECT
Switches between station memory and frequency select modes.

⑤ **CLASS button**
Switches between the three banks (classes) of station memories.

⑥ **MEMORY button**
Press to memorize a station for recall using the STATION (+/–) buttons. Also use to search in RDS mode

⑦ **RF ATT button**
Use to lower the input level of a radio signal that is too powerful or has interfering waves, thus causing the receiver to distort

⑧ **CHARACTER/SEARCH button**

Use this button to search for different program types in RDS mode. It is also used to input station names.

⑨ **EON MODE button**
Use this button to search for different programs that are transmitting traffic or news information (this search method is called EON).

⑩ **Display**

⑪ **Remote sensor**
Receives the signals fromthe remote control.

⑫ **DSP MODE button**
Use to switch between the various DSP modes available (**HALL, JAZZ, DANCE, THEATER1, THEATER2**) and DSP off. Use to create different surround sound effects from any stereo source.

⑬ **DOLBY PRO LOGIC button**
Use to switch between the various Pro Logic modes (PRO LOGIC, PRO LOGIC THEATER1, PRO LOGIC THEATER2) and Pro Logic off.

⑭ **MASTER VOLUME**
Use to set the overall listening volume.

⑮ **PHONES jack**
Connect headphones for private listening .

⑯ **SPEAKERS button**
Use to switch the speaker system on or off.

⑰ **FL DIMMER button**
Use this button to make the fluorescent display (FL) dimmer or brighter. There are three brightness settings as well as an off setting.

⑱ **BASS (+/–) buttons**
Use to increase/decrease bass (within a range of – 6dB to 6dB in 2dB steps). It cannot be used when S.BASS is on.

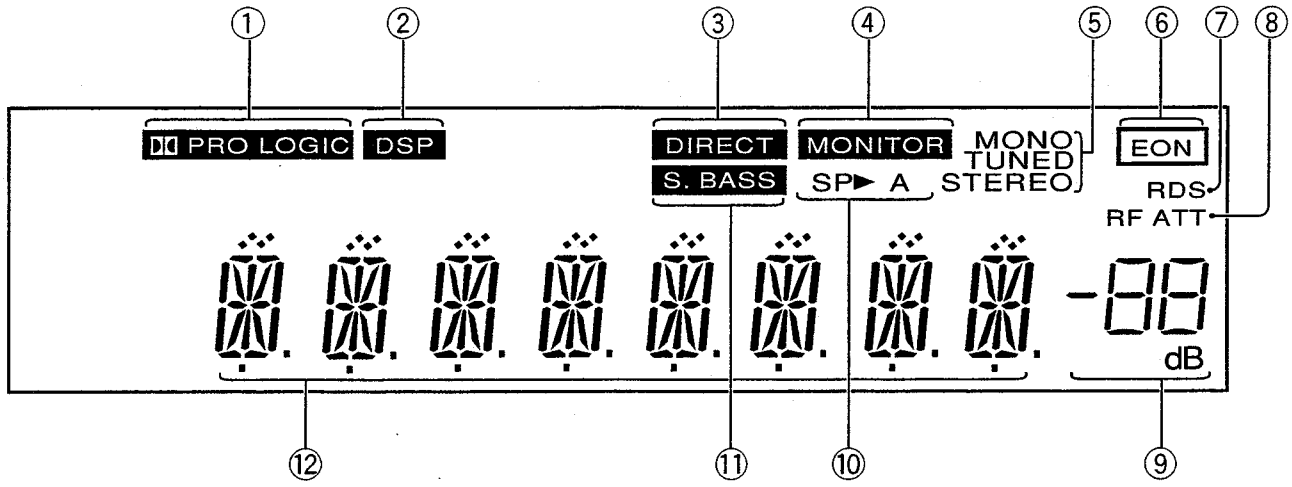
⑲ **TREBLE (+/–) buttons**
Use to increase/decrease treble (within a range of – 6dB to 6 dB in 2dB steps).

⑳ **Function buttons**
Use to select a source for playback or recording.

㉑ **S.BASS button**
Use to switch on and off the bass boost. Use for a more powerful bass sound. Negates use of BASS buttons.

㉒ **DIRECT button**
Use to switch DIRECT playback on or off. This mode bypasses all tone controls, Dolby, DSP and channel levels for the most accurate reproduction of a program source.

■ Display



① PRO LOGIC indicator
Lights when any Dolby Pro Logic mode is selected. The main character display briefly shows the current Pro Logic mode (**PRO LOGIC, THEATER1, THEATER2**) after selection.

② DSP indicator
Lights when any DSP mode is selected. The main character display briefly shows the current DSP mode (**HALL, JAZZ, DANCE, THEATER1** and **THEATER2**) after selection.

③ DIRECT indicator
Lights when source DIRECT is on. This function bypasses all tone, channel level, DSP and Dolby Surround effects.

④ MONITOR indicator
Lights when **MONITOR** is selected to hear a recording as it's being made.

⑤ TUNER indicators
MONO:
Lights when the mono mode is set using the MPX MODE button.
TUNED:
Lights when a broadcast is being received.
STEREO:
Lights when a stereo FM broadcast is being received in auto stereo mode.

⑥ EON indicator
When the EON mode is set the EON indicator with a box around it lights, but during actual reception of an EON broadcast the EON indicator will flash. An empty box in the EON indicator spot means it is possible to pick up an EON broadcast but the receiver has not been set to do so (this will only appear when RDS is switched on).

⑦ RDS indicator
Lights when an RDS broadcast is received.

⑧ RF ATT indicator
Lights when the RF ATT is on.

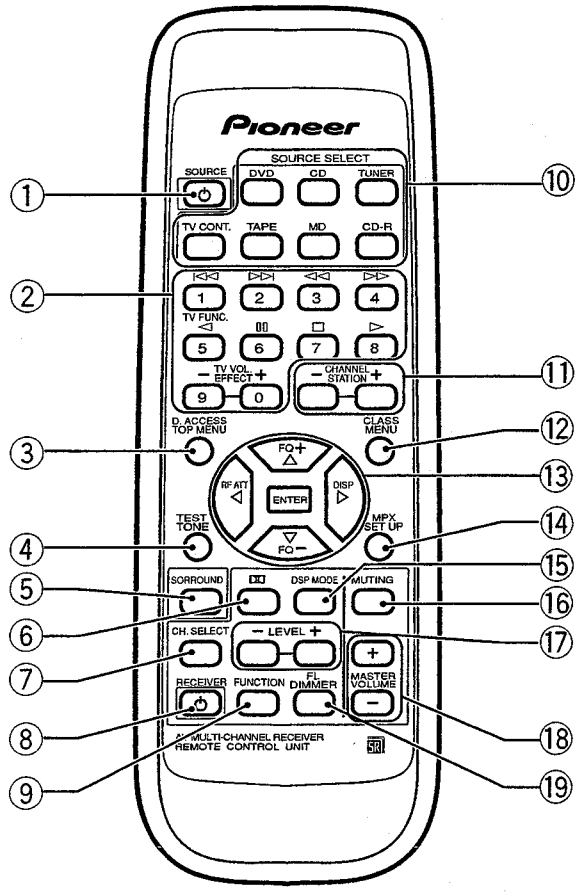
⑨ MASTER VOLUME LEVEL
Shows the overall volume level. Volume level is maintained even when the power is off. ---dB indicates the minimum level, and 0dB indicates the maximum level.
- Depending on the level settings for individual channels, the MAX level can range between –10dB and 0dB.

⑩ SPEAKER indicator
Shows if the speaker system is on or not. If SP►A appears speakers are switched on. If SP► appears speakers are switched off.

⑪ S. BASS indicator
Lights when the S. BASS is on.

⑫ CHARACTER display
Shows radio frequency or function (DVD/LD, CD, etc.) receiver is using .

■ Remote Control Unit



① SOURCE ⏻ (POWER) button
This button turns on/off the power for PIONEER components connected to the VSX-409RDS.

② NUMBER/PLAYER COMMAND buttons

Use to select radio frequency in tuner mode. Also, you can use to contol PIONEER components like CD players, cassette decks, etc. according to the comands printed above the button (|◄◄ ► ■, etc.)

③ D.ACCESS/TOP MENU button

This button gives you direct access to radio frequency input, allowing you to input a station directly. In DVD mode this button brings you to the top menu.

④ TEST TONE button
Use this button to hear a test tone from each speaker in turn to set the relative speaker volumes. Also switches the BAND in TUNER mode.

⑤ SURROUND button

Use this button to set up the surround sound features of the VSX-409RDS. In particular, it's used to select the type of center mode, turn on/off subwoofer option and select distance for each speaker. Also used to start the process of setting the effect levels

⑥ DD button
Use to select a Dolby Pro Logic mode. Also used to access Test Tone.

⑦ CH. SELECT button
Used to start the process of setting the speaker levels (see ⑰ below).

⑧ RECEIVER STANDBY/ON button
Use to switch the receiver between on and standby modes.

⑨ FUNCTION button
Use select the playback or recording source.

⑩ SOURCE SELECT keys
Use to put the remote control (NOT the receiver) in the stated mode.
For other equipment controls.

⑪ CHANNEL/STATION +/– buttons

Use to select the station of memorized frequencies or change channels on Pioneer-made TVs.

⑫ CLASS/MENU button
Use to switch between the three banks (classes) of station memories.

⑬ ◄ (RF ATT) ► (DISP) ▲▼ (FQ +/–) & ENTER buttons

Use these arrow buttons when setting up your surround sound system. These buttons are also used to control DVD menus/options and for deck 1 of a double cassette deck player. The FQ +/– buttons can be used to find radio frequencies and the RF ATT and DISP buttons have special functions.

⑭ MPX/SETUP button
Use to switch between auto stereo and mono reception of FM broadcasts. If the signal is weak then switching to MONO will improve the sound quality. In DVD mode this button brings up the SETUP menus.

⑮ DSP MODE button
Use to switch between the various DSP modes available (**HALL, JAZZ, DANCE, THEATER1, THEATER2**) and DSP off. Use to create different surround sound effects from any stereo source.

⑯ MUTING button
Use to mute all audio without affecting any of the current sound settings. If you adjust the volume the muting is automatically cancelled.

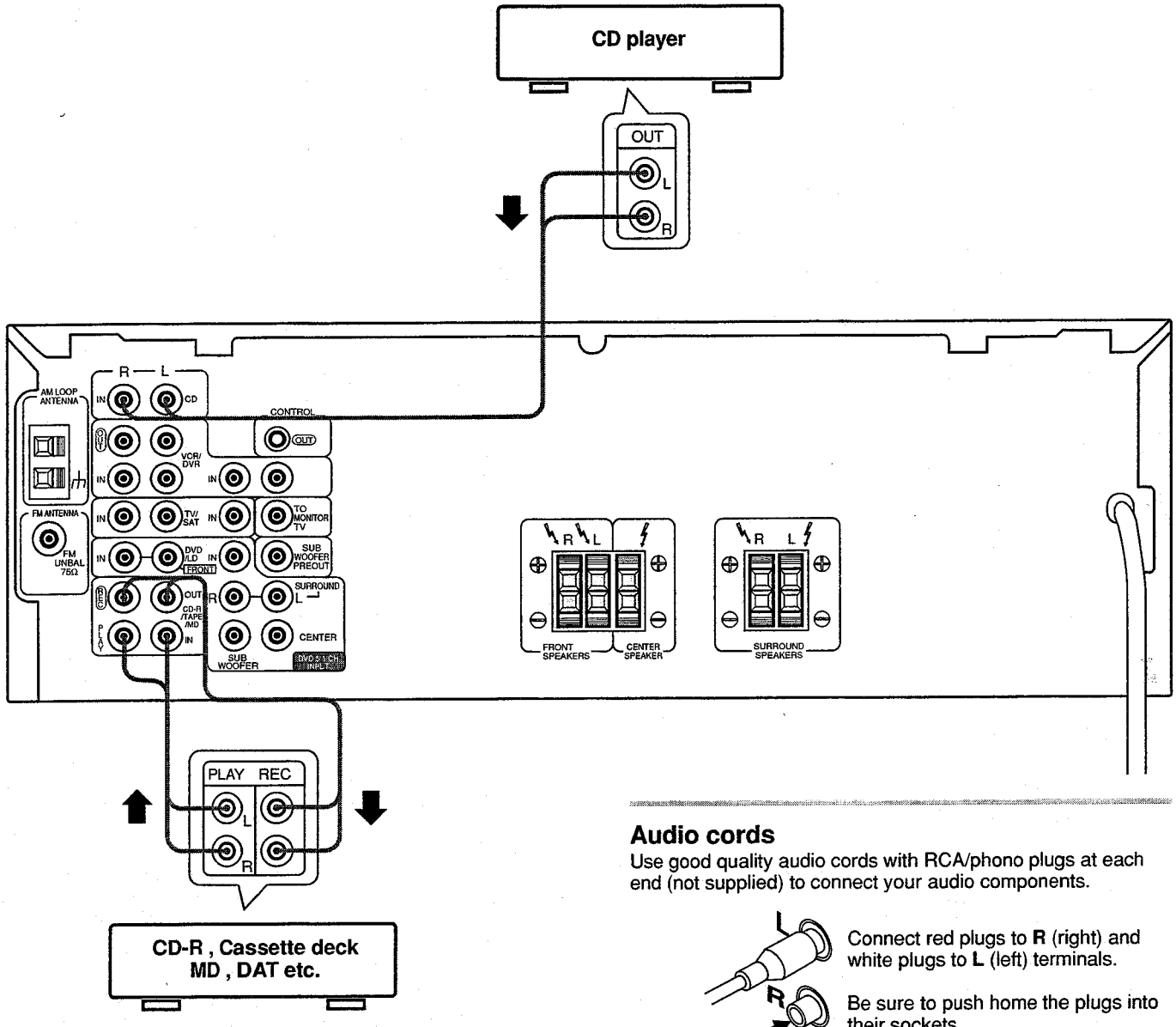
⑰ LEVEL +/– buttons
Use to set the relative speaker volumes for all the speakers in your system (see ⑦ above).

⑱ MASTER VOLUME +/– buttons
Use to set the overall listening volume.

⑲ FL DIMMER button
Use this button to make the fluorescent display (FL) dimmer or brighter. There are three brightness settings and an off setting.

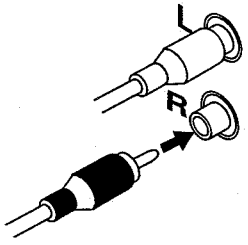
Connecting Audio Components

Connect your audio components as shown below. When connecting equipment, always make sure the power switched off and the power cord is disconnected from the wall outlet.



Audio cords

Use good quality audio cords with RCA/phono plugs at each end (not supplied) to connect your audio components.



Connect red plugs to **R** (right) and white plugs to **L** (left) terminals.

Be sure to push home the plugs into their sockets.

Cassette deck placement

Depending on where the cassette deck is placed, noise caused by leakage flux from the transformer in the receiver may occur during playback. If you experience noise, move the cassette deck farther away from the receiver.

8.2 SPECIFICATIONS

Continuous Power Output
Front ..... 80 W + 80 W (DIN,1kHz, 0.9 %, 8 Ω)
Center ..... 80 W (DIN,1kHz, 0.9 %, 8 Ω)
Surround ..... 80 W + 80 W (DIN,1kHz, 0.9 %, 8 Ω)
• Above specifications are for when power supply is 230 V.

Input (Sensitivity/Impedance)
CD, VCR/DVR, CD-R/TAPE/MD, DVD/LD, TV/SAT
..... 200 mV/47 kΩ
Frequency Response
CD, VCR/DVR, CD-R/TAPE/MD, DVD/LD, TV/SAT
..... 5 Hz to 100,000 Hz $^{+0}_{-3}$ dB
Output (Level/Impedance)
VCR/DVR REC, CD-R/TAPE/MD REC
..... 200 mV/2.2 kΩ
Tone Control
BASS ..... ± 6 dB (100 Hz)
TREBLE ..... ± 6 dB (10 kHz)
S.BASS ..... + 8 dB (100 Hz)
Signal-to-Noise Ratio [DIN(Rated power output/50 mW)]
CD, VCR/DVR, CD-R/TAPE/MD, DVD/LD, TV/SAT
..... 88 dB/64 dB

Video Section
Input (Sensitivity/Impedance)
VCR, DVD/LD, TV/SAT ..... 1 Vp-p/75 Ω
Output (Level/Impedance)
VCR ..... 1 Vp-p/75 Ω
Frequency Response
VCR, DVD/LD, TV/SAT → MONITOR
..... 5 Hz to 7 MHz $^{+0}_{-3}$ dB
Signal-to-Noise Ratio ..... 55 dB
Cross Talk ..... 55 dB

FM Tuner Section
Frequency Range ..... 87.5 MHz to 108 MHz
Usable Sensitivity ..... Mono:15.2 dBf, IHF (1.6 µV/75 Ω)
50 dB Quieting Sensitivity ..... Mono: 20.2 dBf
Stereo: 41.2 dBf
Signal-to-Noise Ratio ..... Mono: 76 dB (at 85 dBf)
Stereo: 72 dB (at 85 dBf)
Distortion ..... Stereo: 0.6 % (1 kHz)
Alternate Channel Selectivity ..... 70 dB (400 kHz)
Stereo Separation ..... 40 dB (1 kHz)
Frequency Response ..... 30 Hz to 15 kHz (±1) dB
Antenna Input ..... 75 Ω unbalanced
Sensitivity (DIN) ..... Mono: 1.1 uV(S/N 26dB)
Stereo 50 uV(S/N 46dB)
Signal-to-Noise Ratio (DIN) ..... Mono: 62dB
Stereo: 58dB

AM Tuner Section
Frequency Range ..... 531 kHz to 1,602 kHz
Sensitivity (IHF, Loop antenna) ..... 350 µV/m
Selectivity ..... 30 dB
Signal-to-Noise Ratio ..... 50 dB
Antenna ..... Loop antenna

Miscellaneous
Power Requirements ..... AC 220-230 V, 50/60 Hz
Power Consumption ..... 220 W
In Standby Condition ..... 1 W
Dimensions ..... 420 (W) x 158 (H) x 391 (D) mm
Weight (without package) ..... 8.4 kg

Furnished Parts
FM Wire Antenna 1
AM Loop Antenna 1
Dry Cell Batteries
size "AA" (IEC R6P) 2
Remote Control Unit 1
Operating Instructions 1

NOTE:
Specifications and the design are subject to possible modifications without notice, due to improvements.

MAINTENANCE OF EXTERNAL SURFACES
- Use a polishing cloth or dry cloth to wipe off dust and dirt.
- When the surfaces are very dirty, wipe with a soft cloth dipped in some neutral cleanser diluted five or six times with water, and wrung out well, and then wipe again with a dry cloth. Do not use furniture wax or cleaners.
- Never use thinners, benzene, insecticide sprays or other chemicals on or near this unit, since these will corrode surfaces.

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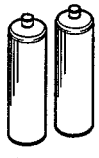
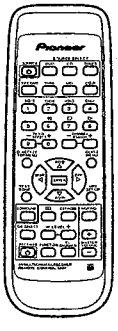
■ Accessories

AM loop antenna
(ATB7009)

FM wire antenna
(ADH7005)


'AA' size IEC R6P
batteries (x2)


Remote control unit
(CU-VSX167 : AXD7243)